40327

National Library of Canada
Bibliothèque nationale du Canada

CANADIAN THESES ON MICROFICHE

THÈSES CANADIENNES SUR MICROFICHE

NAME OF AUTHOR/*NOM DE L'AUTEUR* Andra P.S. Thakur

TITLE OF THESIS/*TITRE DE LA THÈSE* The Impact of Technology on Agriculture: A Study of the Mechanization of Guyana's Rice Industry

UNIVERSITY/*UNIVERSITÉ* U of A

DEGREE FOR WHICH THESIS WAS PRESENTED/ *GRADE POUR LEQUEL CETTE THÈSE FUT PRÉSENTÉE* Ph. D.

YEAR THIS DEGREE CONFERRED/*ANNÉE D'OBTENTION DE CE GRADE* 1978

NAME OF SUPERVISOR/*NOM DU DIRECTEUR DE THÈSE* Richard Frucht

Permission is hereby granted to the NATIONAL LIBRARY OF CANADA to microfilm this thesis and to lend or sell copies of the film.

The author reserves other publication rights, and neither the thesis nor extensive extracts from it may be printed or otherwise reproduced without the author's written permission.

L'autorisation est, par la présente, accordée à la BIBLIOTHÈQUE NATIONALE DU CANADA de microfilmer cette thèse et de prêter ou de vendre des exemplaires du film.

L'auteur se réserve les autres droits de publication; ni la thèse ni de longs extraits de celle-ci ne doivent être imprimés ou autrement reproduits sans l'autorisation écrite de l'auteur.

DATED/*DATÉ* July 27'78 SIGNED/*SIGNÉ* Andra

PERMANENT ADDRESS/*RÉSIDENCE FIXE*
3207-70 ST
Edmonton Alberta T6K1L3

NL-91 (3-74)

National Library of Canada

Cataloguing Branch
Canadian Theses Division

Ottawa, Canada
K1A 0N4

Bibliothèque nationale du Canada

Direction du catalogage
Division des thèses canadiennes

NOTICE

The quality of this microfiche is heavily dependent upon the quality of the original thesis submitted for microfilming. Every effort has been made to ensure the highest quality of reproduction possible.

If pages are missing, contact the university which granted the degree.

Some pages may have indistinct print especially if the original pages were typed with a poor typewriter ribbon or if the university sent us a poor photocopy.

Previously copyrighted materials (journal articles, published tests, etc.) are not filmed.

Reproduction in full or in part of this film is governed by the Canadian Copyright Act, R.S.C. 1970, c. C-30. Please read the authorization forms which accompany this thesis.

THIS DISSERTATION
HAS BEEN MICROFILMED
EXACTLY AS RECEIVED

AVIS

La qualité de cette microfiche dépend grandement de la qualité de la thèse soumise au microfilmage. Nous avons tout fait pour assurer une qualité supérieure de reproduction.

S'il manque des pages, veuillez communiquer avec l'université qui a conféré le grade.

La qualité d'impression de certaines pages peut laisser à désirer, surtout si les pages originales ont été dactylographiées à l'aide d'un ruban usé ou si l'université nous a fait parvenir une photocopie de mauvaise qualité.

Les documents qui font déjà l'objet d'un droit d'auteur (articles de revue, examens publiés, etc.) ne sont pas microfilmés.

La reproduction, même partielle, de ce microfilm est soumise à la Loi canadienne sur le droit d'auteur, SRC 1970, c. C-30. Veuillez prendre connaissance des formules d'autorisation qui accompagnent cette thèse.

LA THÈSE A ÉTÉ
MICROFILMÉE TELLE QUE
NOUS L'AVONS REÇUE

NL-339 (3/77)

THE UNIVERSITY OF ALBERTA

THE IMPACT OF TECHNOLOGY ON AGRICULTURE: A STUDY OF THE MECHANIZATION OF GUYANA'S RICE INDUSTRY

by

© ANDRA P. THAKUR

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH
IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE
OF DOCTOR OF PHILOSOPHY

DEPARTMENT OF ANTHROPOLOGY

EDMONTON, ALBERTA
FALL, 1978

THE UNIVERSITY OF ALBERTA

FACULTY OF GRADUATE STUDIES AND RESEARCH

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled "The impact of technology on agriculture: A study of the mechanization of Guyana's rice industry," submitted by Andra P. Thakur in partial fulfilment of the requirements for the degree of Doctor of Philosophy.

....
Supervisor

....

....

Anthony M. Mardiros

....

Date 12 May 1978

Dedicated to the men who taught me to plough and the women who taught me to plant. I am proud of their NATIONAL SERVICE in their help to FEED THE NATION.

ABSTRACT

This is a study in the anthropology of development dealing with the role of technological innovation in the process of agrarian change. The approach taken here will avoid crude technological determinism and adopt a dialectical view of technological and social change. In emphasizing the diffusion of ideas and technology from the developed to the underdeveloped world, many, if not most, analyses take into account only the *external* factors which lead to development while ignoring the *internal* ones, that is, this social, political and economic relation *within* the underdeveloped society which may impede or accelerate change.

The specific focus of the study is the rice industry of Guyana. It will attempt an explanation of the practical social, economic and political problems involved in the acceptance and rejection of new tools and techniques used in the process of production. This involves a critique of the so-called demonstrator effect, which suggests that innovations are generally adopted only after use by community leaders. The process of development is thus reduced to the behaviour of a few community leaders. Case materials which contradict this notion will be presented in Chapter VIII. These materials will show that "necessity is the mother of invention" is somewhat reversed in Guyana, since new inventions and technological innovations generate even more necessities. In other words, modernization has led to increasing dependence of Guyana on the developed nations.

Before independence in 1966, Guyana was the colony of British Guiana, and before that there were the colonies of Berbice, Demerara and Essequibo, belonging to the Dutch, French, and then to the British. Thus, Guyana has always been in a dependent relation as a colony of an imperial power. We may then ask to what extent the imperialist/colonial relationship motivated technological changes (the external factors) and to what extent the social, political and economic relations (the internal factors) of the colony hindered or accelerated these changes? Since there is no traditional, pre-modern or pre-capitalist (aboriginal societies excepted of course) state of affairs in Guyana, the process of agrarian change referred to above involves a transition from non-mechanized to mechanized technology in rice production--instead of a transition from traditional to modern agrarian society. This thesis is about the causes and effects of technological innovation in a particular sector of the economy of a dependent, underdeveloped and over-exploited nation on the periphery of the capitalist world system.

ACKNOWLEDGEMENTS

Hundreds of people have contributed to the completion of this study. First, I am grateful to Professor Richard Frucht who has been not only my supervisor but a friend. I am also indebted to Professors David Bai, Tony Fisher, Tony Mardiros and Hank Lewis, for the keen interest they have shown in my work and the assistance they have offered me over the years.

Vincent De Souza and Percy Williams of the Guyana Rice Board provided valuable assistance. Harry Madramootoo, Director of Rice Research; Gavin Kennard, Minister of Agriculture; Stanley Hamilton, former Commissioner of the Upper Corentyne area; and Leon Dundas, Manager of the Rice Board at Springlands were all very helpful.

Special thanks must be given to *ALL* my friends (it would be difficult to name all of them) in the Upper Corentyne area, and my parents who, during the course of field work, made my stay a pleasurable one. Also, I would like to thank my friends Eddie and Noreen Singh, Urani De Souza and Loon Ganesh from the East Bank of Demerara. In Surinam, Ousman Jahangier (Johnny), Ewald Neezamodien and the "boys" were no less accommodating. The Commissioner of Nickerie, Mr. Bharose, was extremely helpful. So too were Mr. and Mrs. Ashok Kalloe of Wagening, Surinam.

Thanks also to my brother Rishee who was always ready to provide helpful criticism. I would also like to thank Leela Narine and Diana Zaiffdeen for typing the thesis, and Gilda Sanders and Ronald Narine for the laborious task of proofreading it.

This study was made possible through a grant from the International Development Centre (Ph.D. Thesis Award). I would like to thank the staff of Human Resources Division, especially Pierre Paradis, Louise Rohonczy and Alan Rix for the interest they have shown in my work.

Finally, I would like to thank my wife Savitri Devi for her patience and understanding over the past three years, sharing all the agony and frustrations connected with the completion of this thesis.

TABLE OF CONTENTS

PAGE

PART I 1

CHAPTER I. TECHNOLOGY AND DEVELOPMENT 2

A. Statement of Problem 2

B. The Role of Technology in Development 3

C. Technology and Development in the Caribbean 23

D. Plan of Thesis 27

CHAPTER II. GEOGRAPHICAL AND HISTORICAL BACKGROUND OF GUYANA 31

A. Introduction 31

B. Topography, Soil and Climate 35

1. The coastal belt 40

2. The lowland region 40

3. The Pakarima Mountain range 41

4. The southern upland region 41

5. The new river/Corentyne area 41

C. Colonization: From the Dutch to the British 41

D. Emancipation, Labour and the Emergence of the Peasantry 45

E. The Sugar Industry 51

F. Monopoly Bauxite and Other Resources 55

G. Summary 61

PAGE

PART II. RICE PRODUCTION IN GUYANA: PROBLEMS AND CONSTRAINTS . . . 63

CHAPTER III. RICE: ITS ORIGIN, DIFFUSION AND INTRODUCTION IN GUYANA 64

A. Introduction 64

B. Adaptation and Diffusion 65

C. Introduction to Rice in Guyana 69

D. Summary 80

CHAPTER IV. ORGANIZATIONAL CONSTRAINTS OF RICE PRODUCTION 83

A. Introduction 83

B. The Rice Marketing Board 84

C. The Rice Development Corporation 91

D. The Rice Producers' Association 94

E. Land Tenure, Local Government and Peasant Producers 98

F. Summary 103

CHAPTER V. POLITICS AND THE ECONOMIC CONSTRAINTS OF RICE PRODUCTION 106

A. Introduction 106

B. The Politics and Economics of Rice 107

1. First policy statement 126

2. Second policy statement 127

3. Third policy statement 127

4. Fourth policy statement 128

C. Creditors and Small Farmers 134

D. Summary 140

PAGE

PART III. RICETOWN: A CASE STUDY OF RICE PRODUCTION 142

CHAPTER VI. RICETOWN: FAMILY, CLASS AND POLITICS 143

A. Introduction 143

B. The Area 145

C. Ricetown: The Village 147

D. Acquisition of Land in Ricetown 151

E. Household Organization and the Family 155

F. Economic Activities and Social Status in Ricetown 166

1. Other sources of livelihood 177

2. Emigration and remittances 179

G. Village Politics 182

H. Summary 185

I. Appendix to Chapter VI 187

CHAPTER VII. HISTORICAL CONTEXT OF RICE PRODUCTION IN RICETOWN 199

A. Introduction 199

B. Rice Calendar 200

C. The Technical Context of Rice Production 203

D. Land Preparation and Sowing 207

E. Rice Cultivation 211

F. Reaping and Threshing 212

G. Transportation and Storage 215

H. Processing 217

I. A Pre-mechanized Work Day 220

J. Summary 221

PAGE

PART III (Continued)

CHAPTER VIII. CONTEMPORARY RICE PRODUCTION 223

A. Introduction 223

B. Contemporary Rice Calendar 223

C. Land Preparation 227

1. Dry seeding 227

2. Pre-germinated seeds 228

D. Cultivation 231

1. Water 231

2. Fertilizers 232

3. Weeds 232

4. Insects 233

E. Reaping 234

F. Transportation and Storage 236

G. Drying and Processing 239

1. White rice processing 240

2. Brown rice processing 242

H. Division of Labour 245

I. A Mechanized Work Day 245

J. Innovation and Resistance 247

K. Summary 252

PART IV 253

CHAPTER IX. CONCLUSION AND SUGGESTIONS 254

LIST OF TABLES

TABLE		PAGE
I	Active occupation of Essequibo, Demerara and Berbice by the European powers from 1621-1831	32
II	Population by sex and ethnicity	33
III	Exports of articles produced in Guyana	52
IV	Bauxite prices (in U.S. dollars) in 1969	57
V	Rice: Area cultivated and prices paid to farmers	79
VI	Rice export price in B.W.I. dollars	81
VII	Interest paid and loss sustained by the Rice Development Corporation	93
VIII	Guyana Rice Producers' Association	97
IX	Size of rice acreage under cultivation by farm units in 1954	104
X	Excess of income over expenditure 1964-1974	115
XI	Prices paid by the Board to farmers for one bag (180 pounds) of parboiled rice from 1962-1974	119
XII	Prices paid by the Board to farmers for one bag (180 pounds) of white rice (approved varieties Starbonnet and Blue Belle) from 1967-1974	120
XIII	Cost of machinery ($G), 1960-1975	121
XIV	Average yield per acre, 1945-1974, in bags of 140 pounds of paddy	122
XV	Estimated cost for one acre of paddy produced in 1956 (that is, if the farmer had to pay)	132
XVI	Estimated cost of producing one acre of rice in 1974	133
XVII	Household consumption in Ricetown by ethnicity and sex	149

TABLE		PAGE
XVIII	Population distribution in Ricetown by age and sex	150
XIXA	No. of acres of riceland owned in and out of Ricetown by the residents of Ricetown	171
XIXB	No. of acres of riceland cultivated by the residents of Ricetown	171
XX	Domestic units and status groups in Ricetown	172
XXI	Use of wage labour	175
XXII	Wage employment and other sources of income in Ricetown	176
XXIII	Average no. of work days and tools involved in producing one acre of rice during the first and second periods	202
XXIV	Average no. of work days and tools involved in producing one acre of rice during the third period . . .	225

LIST OF FIGURES

FIGURE PAGE

1 Average monthly rainfall 1956-1971 39

2 Bookers Group holdings in Guyana 54

3 Rice import/export overlapping 86

4 Layout of Ricetown - Cultivation and residential area . . 100

5 Comparison of acreage occupied by rice, sugar and coconut from 1953-1966 109

6 Excess of income over profit and loss 116

7 Layout of Ricetown 153

8 Extended household compound in Ricetown 156

9 Inside view of a kitchen 157

10 Seasonal activity of rice production in Ricetown during the first and second periods 201

11 Early tools involved in processing 218

12 Seasonal activity of rice production in Ricetown during the third period 224

LIST OF MAPS

MAP

I Map of South America 36

II Topographic map of Guyana 37

III Northern and southern boundaries of paddy cultivation . . 66

IV Eastern Berbice 102

V Upper Corentyne area 144

PAGE

BIBLIOGRAPHY 269

APPENDIX I 300

APPENDIX II 307

APPENDIX III 309

APPENDIX IV 310

PART ONE

Part one is the introduction. As with the rest of this thesis the discussion follows one order, i.e., from the general to the specific. Chapter I deals with the problem: the role of technology in development. This is followed by a discussion on technology and development in the Caribbean. Finally, the discussion is focused on technology and development in Guyana. Chapter II describes the geography of Guyana and presents a brief overview of its history.

CHAPTER I

A. STATEMENT OF PROBLEM

This is a study in the anthropology of development dealing with the role of technological innovation in the process of agrarian change. The approach taken here will avoid crude technological determinism and adopt a dialectical view of technological and social change. In emphasizing the diffusion of ideas and technology from the developed to the underdeveloped world, many, if not most, analyses take into account only the *external* factors which lead to development while ignoring the *internal* ones, that is, the social, political and economic relation *within* the underdeveloped society which may impede or accelerate change.

The specific focus of this study is the rice industry of Guyana. It will attempt an explanation of the practical social, economic and political problems involved in the acceptance and rejection of new tools and techniques used in the process of production. This involves a critique of the so-called demonstrator effect, which suggests that innovations are generally adopted only after use by community leaders. The process of development is thus reduced to the behavior of a few community leaders. Case materials which contradict this notion will be presented in Chapter VII. These materials will show that "necessity is the mother of invention" is somewhat reversed in Guyana, since new inventions and technological innovations generate even more necessities. In other words, modernization has led to increasing dependence of Guyana on the developed nations.

Before independence in 1966, Guyana was the colony of British Guiana, and before that there were the colonies of Berbice, Demerara and Essequibo, belonging to the Dutch, French, and then to the British. Thus, Guyana has always been in a dependent relation as a colony of an imperial power. We may then ask to what extent the imperialist/colonial relationship motivated technological changes (the external factors) and to what extent the social, political and economic relations (the internal factors) of the colony hindered or accelerated these changes. Since there is no traditional, pre-modern or pre-capitalist (aboriginal societies excepted of course) state of affairs in Guyana, the process of agrarian change referred to above involves a transition from non-mechanized to mechanized technology in rice production--instead of a transition from traditional to modern agrarian society. This thesis is about the causes and effects of technological innovation in a particular sector of the economy of a dependent, underdeveloped and over-exploited nation on the periphery of the capitalist world system.

B. THE ROLE OF TECHNOLOGY IN DEVELOPMENT

The term "technology" often connotes different things to different people. Since one point of this study deals with technology, it is important to have a clear definition of what is meant by technology. Technology in its broadest sense involves all human activity which includes practical know-how involved in production. Gendron's definition of technology seems appropriate when he states that:

> A technology is any systemized practical knowledge, based on experimentation and/or scientific theory, which enhances the capacity of society to produce goods and services and which is embodied in productive skills, organization of machinery (1977:23).

However, it is important to bear in mind that there are other forms of practical know-how such as the priesthood, mastering a sport and so on, which are not "embodied in production." To be more specific, Gendron (ibid.) goes on to state that technology is not a set of things, "rather it is an abstract system of practical knowledge, which often but not always, finds its embodiment in productive hardware." In other words, technology is the tool, that is, the digging stick, hoe, cutlass, wooden plough, tractors, combines, etc., as well as the techniques or the practical know-how involved in production.

In discussing the historical changes in technology--bearing in mind we are talking of the tools as well as the techniques involved in production--it is important that we place in proper perspective the constraints which operate on the technological capacity of that particular era of human history. First, and most important, is the constraint on the accumulated amount of knowledge or technical know-how, and secondly, the material competence of that particular era. In other words, it is impossible to develop the wooden plough without: (a) the availability of wood; (b) the technical skill to produce it. Similarly, it would have been impossible to develop industrial technology without the skill and the development of metal-working technology. The prerequisite of production is the existence of a productive force, i.e., the instruments and the people who could use them. Men throughout history, in order to produce, organized themselves in a certain manner by pooling their efforts into a relationship with one another. This relationship is referred to as the social relations of production.

To focus on the social relations of production means that the development and transformation of technology take place within a specific socioeconomic environment, which either hinders or facilitates its growth. In *China*: *Science Walks on Two Legs*, Scientists and Engineers for Social and Political Action (SESPA, or Science for the People as it is popularly known) argues that the problems of science and technology arise from the "problems of political and economic control in the society" (1974:3). The study goes on to argue that since the dominant factor in capitalist society is the profit motive then science and technology inextricably proceed on the same basis:

> . . . technology follows the logic of profit and that control of funding dominates the funding of scientific work. In short, scientific activity is not value free in this or any other society (ibid.:3).

In another study, David Dickson (1974) makes the same point and goes on to argue that since such activities demanded large quantities of capital input, it is only a small section of society that possesses such capital and is thus able to derive the benefits from the new technology.

> . . . technological development is essentially a political process. At a material level, technology sustains and promotes the interests of the dominant social group of the society within which it is developed [or introduced]. At the same time it acts in a symbolic manner to support and propagate the legitimizing ideology of this society--the interpretation that is placed on the world and on the individual's position in it (ibid.:10).

Thus science and technology are not apolitical, benevolent instruments of production but emerge out of the demands and necessities of a particular formation. They do not operate independently of, or in isolation from, the factor(s) which set them in motion. They are but themselves instruments of the factor(s) that set them in motion. The myth of technology as the great equalizer is just that: a myth (for further discussion see Gendron 1977).

The process of dependency and underdevelopment is based on the use of cheap labour in the production of commodities for an export market. Further, because of the size of foreign operations in Third World societies (bauxite, oil and sugar in the Caribbean), they have the overall effect of structuring the rest of the economy to their needs and demands. Thus the process of technological innovation is geared precisely to serve the needs of the "foreign sector." This, of course, further exacerbates the process of dependent underdevelopment (Singer 1954:220-221).

First of all, the technology that is required for such large-scale production as plantation economies, mines and other resource extraction was and is being developed in the advanced capitalist countries (ibid.:221). The initial impetus of production, therefore, arises from the transfer of such technology to areas of the Third World that saw the development of the "export sectors" to meet the demands of the international market. As the West Indian economist Lloyd Best argues, it is precisely this process of "technological transfer for production" to meet the demands of the international market that structures the process of development. These subsidiaries of multinational corporations:

> . . . form parts of wider international systems of resource allocation. This is true of the mining corporations, the sugar companies, the hotel chains, the banking, the hire-purchase, and insurance houses, the advertising companies, the newspapers and television and radio-stations . . . . Insofar as there is harmonization among the concerns, it is for the most part achieved within the context of the metropolitan economies where they are based and not in the peripheral economies where the companies actually operate. Moreover, the policies of the corporations are determined by their parent companies operating somewhere in the northern hemisphere and not by local need to integrate industries

> and to increase inter-dependence between different sectors of the economy. The economy is, therefore, hardly more than a locus of production made up of a number of fragments held tenuously together by Gov't. controls--themselves often borrowed from elsewhere. In other words . . . it seems inherent in the structure of international corporations which operate in the region that the Caribbean economies remain fragmented and unintegrated (1968:72).

The point is that such technological transfers that do take place, occur within a system of resource allocation already defined. And this system is geared primarily to serve the interest of the metropolitan economy which defines the structure of the relationship between the developed and the underdeveloped economy (Wallerstein 1973:277-283). It thereby reinforces the dependency structure since the technology becomes another means of subjecting the local economy to the needs and demands of the international market (Demas 1975:64).

Secondly, because of the monopoly control on such technology the price is arbitrary and bears no relation to normal market prices. The result is that limited foreign earnings are diverted from internal development projects to meet the demands of foreign technology. In addition, their payment of fees for patent rights, which occurs through parent and subsidiaries of multinational corporations, has been increasing at phenomenal rates. A recent study by the Social and Economic Council of the United Nations on Multinational Corporations and World Development found the following:

> Payments by these (underdeveloped) countries for fees, amounted to approximately the total of their combined exports and to a little more than half of 1% of the combined gross domestic product. The total cost for such payments for thirteen developing countries, representing 65% of the total population and 56% of the total gross domestic product of developing countries, is estimated at approximately $1.5 billion, which amounts to more than half of the flow of direct private foreign investments to developing countries.

> These payments are growing steadily at a rate which is estimated by the U.N.C.T.A.D. Secretariat at about 20 per cent per annum on the average and are absorbing an increasing proportion of the export earnings of developing countries (U.N. 1974:168).

One does not have to look too far to find the result of such a process. In addition, the built-in obsolescence of technology can only accentuate the process of increased payments.

Thirdly, the manner in which the technology is introduced results in further drain to the local economy. The control of colonial economies by imperial governments enforced the view that the only means of economic development was through the increasing investment of multinational corporations. These investments are seen as not only having brought in much needed capital for resource development but as, at the same time, demanding services which would be supplied by the indigenous sector. This "multiplier effect," it was claimed, would result in increasing stimulation of the local sector, providing jobs and other benefits for the entire economy. However, as some economic historians have recognized (Lewis 1955; Dobb 1975; Baran 1957; Hobsbawm 1972), these investments have had two important debilitating effects on local economies. In the first place their high technological content means that these investments are a very minimal employer of indigenous labour. And secondly, their integration in terms of "supply and demand" by the local economy is almost nonexistent. The result is that these investments have been dubbed the classic "enclave economies" (Reno 1965) with little or no forward or backward linkages with the indigenous economy. In addition, control by imperial governments of colonial administration meant that duties and taxes were an integral part of that control. The strategy of foreign investments as a path to development resulted in an increasing competition among colonial administrations for the services of foreign capital. The result was offers of free repatriation of profits, tax holidays and concessions, serviced industrial sites and a host of other inducements to foreign capital.

Thus, perhaps the only way that colonial economies could control and derive some benefits from the technology introduced is lost. Further, since nationalization has failed in every important aspect to deliver the "promised goods" these offers must be repeated in many different ways to attract investments and to stave off bankruptcy.

Finally, because of the above-mentioned reasons, the technology imported into the colonial (and even post-colonial) societies bears no relation to the needs and demands of the local economy. Its very nature is dictated by the resource allocation schedules of the multinational corporations. This naturally inhibits the development of an indigenous technology and further reinforces the dependency structure of the local economy. Clive Thomas states:

> When dynamically applied and expressed in terms of objective, material phenomena, this consists of the fact that the conjunction of production relations and productive forces is of such a character that the measure of structural dependence, underdevelopment, and the economic backwardness of the process of production which is important above all others is *on the one hand the lack of an organic link, rooted in the indigenous science and technology, between the pattern and growth of domestic resource use and the pattern and growth of domestic demand, and, on the other, the divergence between domestic demands* and the needs of the broad masses of the population. This interpretation has both qualitative and quantitative dimensions. Together they demonstrate that the crucial elements in the functioning system qua economic system (e.g. the linkages between: labour-resources-technology-demand-needs) are of such a character and are organized in such a way that the communities have internalized through their social relations of production and the use of their productive forces, a pattern of consumption that does not represent the needs of the community and a pattern of production not oriented to the domestic consumption or domestic needs (1974:59).

The point is not simply the existence of foreign technology, which is problematic in itself, but importantly the absence of an "organic link" between such technology and the rest of the economy. The presence or absence of forward and backward linkages which are often pointed to as the indicators of economic and technological integration are only quantitative aspects of a more complex process. The problem, as Best argues, is that the process of resource allocation in local production is geared to the needs and demands of the international market. Also, as Thomas contends, "the local economies have internalized through their social relations of production" the productive and consumptive patterns of the export sector. Thus it is not merely the qualitative inputs of demand of the foreign sector to the local economy which has the most impact but the organization of the productive forces and relations of production and their organization in terms of the needs and demands of the local economy.

The problems of underdevelopment as discussed above place in perspective the rest of this study. There are different forms of economic underdevelopment and dependence which explain the plight of Third World countries. However, there is one form of economic dependence that is directly related to the role of technology in underdevelopment. This Demas (1975:64) refers to as "dependence through reliance on foreign resources and foreign know-how."* The problems of technology in Third World countries were introduced not to meet the needs of the local population, but to satisfy the needs of the metropolis. As a result they had few positive effects on the lives of the majority of the people. As it is, there are three possible directions that Third World technology could take: (1) continued use of capital-intensive technology, which so far has led to an outflow of capital--draining the badly needed foreign reserve--and has accentuated the problems of unemployment; (2) revert to the traditional or "primitive" form of technology--which seems impossible; and (3) the use of what is referred to as "intermediate technology," or to be more precise, appropriate technology.

---

*Although Demas is not clear on exactly what he means by "know-

Since the term *intermediate technology* was first introduced by Schumacher in 1973, it has been widely accepted and used. It seems that the term "intermediate technology" has been coined to fit the technological problems of the Third World countries. The main impact of intermediate technology is that it "would be immensely more productive than the indigenous technology but it would also be immensely cheaper than the sophisticated, highly capital-intensive technology of modern industry" (Schumacher 1974:150). To further exemplify his definition of intermediate technology, Schumacher states:

> If effective help is to be brought to those who need it most, a technology is required which would range in some intermediate position between the £1-technology and the £1,000-technology. Let us call it--again symbolically speaking--a £100-technology.
>
> Such an intermediate technology would be immensely more productive than the indigenous technology (which is often in the condition of decay), but will also be immensely cheaper than the sophisticated, highly capital-intensive, technology of modern industry (ibid.:150).

The point should be made that Schumacher's argument is not one of "scale" but of the types of technology that are employed. An

---

how" I accept the term in its widest sense, besides technical, to include educational, political and so on.

intermediate technology would be an "appropriate technology" (ibid.: 148-150) where people have relatively easy access to technical know-how in order to utilize the tools available or those introduced. It avoids the pitfalls of high specialization of a few people and the consequent alienation of the masses.

In a general discussion on the problems of agriculture in the Commonwealth Caribbean, Dr. Mahadevan, Dean of the Faculty of Agriculture at the University of the West Indies, stated that:

> The long term solutions to the agricultural problems of the Commonwealth Caribbean are not dependent on teams of technicians coming from the affluent countries to solve specific problems or sending large numbers of students to them for training . . . . Rather, they depend on programs which aim at building up local institutions which could then develop the capabilities of large numbers of people in the region to solve their own problems (cited in Ramtahal and Akonaby 1972:239).

The approach to intermediate technology discussed by Schumacher is expressed by Mahadevan. Mahatma Gandhi in his discussion on the role of technology states that every machine that contributes to human progress should have a place in society. However, there should be no room for machinery if its prime purpose is to concentrate power and wealth in the hands of a few and at the same time alienate others (see Dickson 1974:40). According to Koenig, the prime function of intermediate technology is that:

> . . . whereas the conventional approach to industrial technology as a *given* factor in development, as if it were an unchangeable force, to which all other forces must adapt themselves, the new approach [intermediate technology] starts by considering technology as an *important variable* which can and should be adopted so as to work in harmony with the economic, social and cultural environment of developing countries (cited in Dickson 1974:153).

Dickson (1974) has stated that:

> None of the social problems associated with [1] *contemporary technology*, when taken in isolation are sufficient to condemn the whole basis for modern technology. Looked at as a whole however, it is difficult to avoid the conclusion that what is required is the development of an [2] *alternative technology* which is based on the political and environmental criteria which allow potential problems to be taken into account before the technology has been designed rather than after it is being implemented (1974:39).

Dickson's definition of contemporary technology is the use of sophisticated technology in the developed (and underdeveloped) societies. His definition of alternative technology is synonymous with Schumacher's intermediate technology.

Dickson's discussion of alternative technology is very important. He goes beyond merely postulating a "curative" method for the flaws of contemporary technology, but suggests that alternative technology would take into account a preventative approach to potential problems. Alternative technology is being sought not simply to develop new models or theories, but because contemporary technology has failed to solve human problems. And to the degree it has had some success, this is only for a small fraction of the human population. Technology has falsely been seen as the "great democratizer" that would bring equality to all. Far from it, technology has become one more means by which one class maintains supremacy over the other.

These concepts as introduced and articulated by these scholars are relevant but we must recognize that there is more to the study of technological innovation than merely the use of concepts. How do we go about putting intermediate or alternative technology to work? The difficulty lies in the fact that technological innovation is basically influenced by the political and ideological developments within the particular society in which it is introduced.

C. TECHNOLOGY AND UNDERDEVELOPMENT IN THE CARIBBEAN

The unrestrained plunder of the world in the seventeenth and eighteenth centuries *contributed to the accumulation of capital for the industrial revolution in Europe.* The slave trade, for example, was described in such positive terms as "the spring and parent whence the other follow" and as "the first principle and foundation of all the rest, the mainspring of the machine that sets every wheel in motion" (Williams 1944:51). As far as the British Empire was concerned, it was the base of "a magnificent superstructure of American commerce and naval power on an African foundation" (ibid.:51). Eric Williams further stated that "the profits obtained [from the slave trade] provide one of the mainstreams of that accumulation of capital in England which financed the industrial revolution" (ibid.:52).

Gordon Lewis in his noted work, *The Growth of the Modern West Indies,* suggests that the history of the West Indies is first the history of slavery and secondly the history of sugar. The sugar industry after the First and Second World Wars suffered a steady decline so that by the 1950's and 1960's it took second place to such industries as bauxite, oil and tourism. But the fact of slavery persists. As Daniel Guerin (1961:35) points out, "slavery suggests the image."

In more ways than one the Caribbean economies are not very different from their Latin American counterparts, or even from those in Asia or Africa, where underdevelopment is the dominant trait. As a matter of fact, the entire school of Caribbean economists at the University of the West Indies have been influenced by the developments in Latin America and Africa, not only by the political process but also by the intellectual one. This is not to say that Caribbean scholars failed to provide any fresh insights into the problems of underdevelopment. Far from it, while operating independently of their Latin American counterparts, a number of Caribbean scholars came to similar conclusions on the issues of underdevelopment and dependence. Often it is the case that interchangeable examples are used from both regions to point out similarities in the process of development. Girvan and Jefferson, for example, in their *Corporate vs. Caribbean Integration* (1975), point to Brazil as a classic case of the changes of import substitution manufacturing. At the same time, Caribbean economists seem to share the same limitations as their Latin American counterparts. Levitt and Best, for example, suggest that "essentially Caribbean economy has undergone little structural change in the four hundred odd years of its existence" (1975:55).

Caribbean economies, however, differ in one very important respect from Latin America and Africa, i.e., they are almost totally immigrant societies. The result is that the Caribbean is not saddled with pre-capitalist economic formulations, though a number of economists argue for such a dual economy (Beckford 1975:85-89). Slavery and the plantation economy were the initial base of their development. The planter class reigned supreme, not only in the Caribbean but also in Europe, which has given rise to the concept of "plantocracy." It soon became apparent, however, that the very process which the planters had helped set in motion--the industrial revolution--through the accumulation of capital, was about to turn upon them. Slave labour and monopoly were not only costly to the British but the very fact of their existence militated against the development of the new industrial order. Williams stated:

> The attack on the West Indies was more than an attack on slavery. It was the attack on monopoly. Their opponents were not only the humanitarians but the capitalists. The reason for the attack was not only that the West Indies' economic system was vicious but that it was also so unprofitable that for this reason alone its destruction was inevitable (1966:135).

The attack on West Indian planters began in 1807 with the abolition of the slave trade, followed in 1832 by the abolition of slavery itself, and finally the repeal of the Protective Tariff Act which gave the West Indians preferential treatment on the British market. By the end of the nineteenth century the entire sugar industry fell into--or more precisely was taken over by--British monopoly (for a detailed history of this period, see Adamson 1972; Mandle 1974; and Beachey 1957). The financial houses of Tate and Lyle and Booker Brothers, McConnell and Company, to whom the sugar estates had been mortgaged in the heyday of the sugar industry, became the new owners (Beachey 1957). The British Government took an active part in, and facilitated the process of, monopolization through the Encumbered Estates Court Act. "The objective of the Act was to facilitate the sale and transfer of land held by insolvent proprietors" (ibid.:3). But the intent was more than just a legal transfer of titles and payments to the first holders. It was meant primarily to restore some kind of economic order and prosperity to the sugar industry. It became obvious, therefore, that such transfers as did take place would go to those able and willing to inject new life into the industry. The obvious result was that it went to British financial houses that had the economic means to inject vigour into the industry (Adamson 1972; Mandle 1974). But monopolization was not, in and of itself, a sufficient means of returning to the sugar industry some semblance of order and prosperity. It did, however, provide the basis for some important structural changes while it necessitated others, if the new owners were to do any better than their predecessors.

In the first place, amalgamation through monopoly brought several small nonprofitable units under a single organizational structure and management. The immediate result, of course, was the introduction of the economy of size or scale in which better economic use could be made of technology and the existing division of labour. Recommendations for amalgamation were made by the Royal Commission on Commerce as early as 1848. Earl Grey, the Head of the Commission, stated that "central factories were the ideal remedy for the post-Emancipation difficulties of the sugar colonies" (Beachey 1957:81). Thus the decline of the number of sugar estates in the Caribbean was due partly to the economic crisis faced by the small planters which gave rise to the need for centralization.

Secondly, the existing technology in the production of Muscovado sugar was inefficient and wasteful (for further discussion see Deerr 1949). It has been estimated that only fifty to sixty percent of the cane juice was recoverable under the existing system of crushing. The early attempt at new crushing methods introduced in Guyana is evidence of this fact:

> By late 1890's all Estates in British Guiana had doubled or even tripled crushing. On Windsor Forest, over three times as much sugar was made in 1865, and it was to improved mills that much of this gain was attributed (Beachey 1957:63).

Monopolization provided an added impetus to the process of control through a foreign technology. The point to make here, and throughout the thesis, is that the new technology, as an indication of the changes in the productive forces, "has to be regarded as initiated by capital in so far as it is realized through the employment of a greater capital" (Marx 1959:557). What these changes meant for the Caribbean in general, and Guyana in particular, were the structural changes in the economies as initiated by foreign capital. Thus these economies became at one and the same time dominated by foreign capital while dependent on it for such changes as would increase local benefits.

The third, and probably most important, factor we need to recognize is that the value of a commodity, be it sugar, oil or bauxite, should be determined by the cost of the labour that goes into its production. Labour at the same time must be able to reproduce itself, that is, the worker who is engaged in producing these (industrial) commodities must be provided with food, clothing, health and other social necessities, so that the ultimate cost of a commodity should be determined by the cost of the worker's subsistence.

For the sugar industry--after Emancipation and the repeal of the Protective Tariffs Act--this meant the production of cheap staples necessary if the British Caribbean planters were to compete successfully with their Latin American counterparts, especially Brazil and Cuba. For

Guyana and Trinidad the problem was less severe. The "relative newness" of these colonies in terms of the history of the plantation economy had left them with large tracts of fertile, uncultivated land and a shortage of labour. The solution was the importation of indentured labourers from Portugal, Madeira, Hong Kong, the West Indies and finally India. The result was not only that Trinidad and Guyana suffered less from the general problems that affected the industry in the latter half of the nineteenth century, but the system of indentureship itself resulted in some beneficial side-effects which the planters encouraged and fostered. Part of the contract of indentureship in the 1870's and 1880's made provisions for those labourers who wished to remain in the colonies. *The idea was not only to maintain a constant supply of cheap labour but to also encourage the development of a pool of resident labour from which the planters could recruit during the peak crop season.*

In lieu of return passages to India, small parcels of land were made available for every family who wished to remain. This meant that the cost of maintaining labour during the "off-crop season" could thereby be borne by the labourers themselves. The result was a gradual but substantial increase in their cultivation of staples such as rice and ground provisions. Between 1884 and 1888, for example, an average of 19,000 tons of rice was imported into British Guyana; by the end of the century it was reduced to half that amount (Nath 1970). The first decade of the twentieth century witnessed a reverse of the entire process (see Figure 2), so that by the beginning of the First World War in 1914, Guyana had some 47,000 acres under rice cultivation and was exporting about 9,000 tons annually (ibid.:110).

Thus, the increasing production of local staples helped in the reproduction and support of a cheap labour force for the plantation economy. This is a very important fact in explaining:

1. how the process of "unequal exchange" operates to the benefit of foreign capital; and
2. how the other sector of the economy is "structurally" tied to the foreign sector.*

Professor Arthur Lewis makes the point quite well:

> So long as the peasant farms have low productivity, the temperate world can get the services of tropical labour for a very low price. Moreover when productivity rises in the crops produced for export there is no need to share this increase with labour, and practically the whole benefit goes in reducing the price to industrial consumers. Sugar is an excellent case in point. Cane sugar production is an industry in which productivity is extremely high by any biological standard. It is also an industry in which output per acre has about trebled over the past seventy years, a rate of growth unparalleled by any other major agricultural industry in the world--certainly not by wheat industry. Nonetheless, workers in the cane sugar industry continue to walk barefooted, and to live in shacks, while workers in the wheat industry enjoy among the highest living standard in the world. However vastly the sugar industry may become, the benefit accrues chiefly to consumers (1955:281).

However, Arthur Lewis' statement should not go without criticism. While he is correct in his analysis of the system of unequal exchange, he is not entirely right in assuming that the agricultural workers of the industrialized nations enjoy the highest standard of living in the world. Perhaps the most celebrated and best documented case that points in the

---

*This is not arguing for a dual economy but points in the opposite direction in which *capital* "structures" the entire process of underdevelopment.

opposite direction is the United Farm Workers of California. Their plight in most cases is no better than that of their counterparts in the latifundias of Latin America. What should be remembered is that their function in the economy is to serve as cheap labour to produce the staples for the reproduction of labour-power, all in the interest of monopoly capitalism.

In the meantime, the increase in rice production in Guyana was growing by leaps and bounds. By the beginning of the First World War the area under rice cultivation reached nearly 50,000 acres, exporting about 10,000 tons, mainly to the West Indian market. The difficulties encountered in the Caribbean in obtaining food during the two World Wars accelerated this process, so that by the early 1950's more than 100,000 acres had been brought under cultivation. The attempt of the nationalist government of Cheddi Jagan to provide the basis for an independent economy--away from the dependence on sugar and bauxite--made phenomenal strides in bringing more land under rice cultivation. By the end of his premiership in 1964, approximately 278,484 acres were under rice cultivation. What is important to understand in all of this is that, before the attempts of Jagan's government in the late fifties and early sixties, the development of the rice industry was independent of government assistance and was based on small-scale capital and family labour. In almost every case it was independent cultivators that provided the basis and impetus for increased production.

In order to avoid any confusion in the later stages of my analyses I would like to make it quite clear that from the 1890's onwards, rice was produced not as a subsistence crop, i.e., primarily for consumption, but was produced as a commodity, for sale on the local and then on the international market.

Since the focus of this study deals with *the anthropology of development and the role of technology in social change*, I will make explicit my use of technology in development. In section B of this chapter my discussion of technology and social change draws extensively from both Dickson's (1974) and Gendron's (1977) discussions on the social functions of technology in society. The important question is asked: is technology an *independent variable*? The answer is certainly not. This raises the second question: if technology is a dependent variable, then what is it dependent upon? First, physical expansion and technological innovation of Guyana's rice industry found its logic and rationale within the capitalist/colonialist framework, i.e., the need for cheap food within the Caribbean. Any attempt therefore to explain the role of technology in Guyana's rice industry must first understand the historical forces which led to the introduction of technology.

Secondly, since the introduction of higher levels of technology, technological expansion has been rapid. But technological expansion demands large quantities of capital input, the types of capital which could only be afforded by a small sector of the society who in turn enjoy the benefits of new technology. It is this group in capitalist societies (including Guyana) that strives to acquire more and more technology. In explaining the functions of technology in capitalist societies, Dickson stated:

> . . . technological development is essentially a political process. At a material level, technology sustains and promotes the interest of the dominant social group of the society within

> which it is developed [and/or introduced]. At the same time it acts in a symbolic manner to support and propagate the legitimizing idealogy of this society (1974:10).

Thus, a thorough understanding of technology in the role of development must be understood within the entire historical, economic and political process.

D. TECHNOLOGY AND DEVELOPMENT IN GUYANA

In this section I will attempt a brief and general discussion of the literature on development and its articulation to the rice industry within the productive sector of Guyana's economy. More specifically, this analysis will focus on the general themes discussed earlier in this chapter and try to argue that the literature on development in Guyana ha largely been influenced by the theoretical assumptions and economic approach that dominated the field in the 1950's and 1960's. Also, an attempt will be made to show that despite these studies and their related recommendations Guyana's economy has not been significantly altered from its colonial heritage.

I will divide the discussions on development in two groups. First, those who see the problems of underdevelopment as having an internal genesis or malfunctioning in the productive process, and, secondly, those who argued that the problems of underdevelopment must be viewed historically, that is, within the colonial process.

The most important study undertaken by the International Bank for Reconstruction and Development (IBRD) in 1953 entitled *The Economic Development of British Guiana*. This study focused almost exclusively on the internal relations of production and argued that the major problems in British Guiana's economic crisis was the organization of production and the low level of production due largely to the inadequate methods by which production was organized. There seems to be a contradiction since the study noted at the very inception that over eighty percent of British Guiana's exports were bauxite and sugar. There was no attempt in the study to explain, or at least to seek a correlation between the role of the multinational corporations operating in the country and its state of underdevelopment. In fact, the study points to British Guiana's underdevelopment as part of its own making. The historical development of underdevelopment is completely ignored.

In essence, what we get from the IBRD study are recommendations that suggest internal fiscal and monetary manipulations to eliminate the crisis (1953:23). To ignore historical trends in development is to be led up a blind alley. As Gunder Frank (1968) has argued, we cannot hope to formulate adequate policies for the majority of the people in the Third World without first of all understanding the process whereby these societies became underdeveloped. Most of the other studies, though differing in emphasis, seem to suggest that the problem of Guyana's underdevelopment must be found in its "plural culture" (Despres 1966),* or what Glasgow (1970:87) referred to as "a congerie of races." Or as Smith (1962:Chapter VII) insisted on the transfer of political responsibility. The problem in other words lies in the internal organization of the society.*

---

*For further criticism of the applicability of the "plural culture" to Guyanese society, see Thakur (1973:11-17).

Further, there is Wilfred David's (1969) major study, *The Economic Development of Guyana 1953-1964*, in which he concluded that in order for Guyana to become "less vulnerable to unfavourable changes in world market" more attention must be given to the dominant sectors of sugar, bauxite and rice (ibid.:359). The arguments seem the same: concentration of increasing production without any mention of how the surplus is being appropriated and by whom.

In examining the problem of the rice industry there is, first of all, the question of the size of farms. The IBRD study (1953:146) for example, pointed out that the average size of rice farms is only 6.5 acres per unit. The immediate difficulty as far as the IBRD was concerned was that labour and capital were inappropriately applied and this was why productivity remained at a low level. Although some of the studies listed pointed to some of the difficulties associated with the internal organization of production, they failed to locate it within the structural organization of a foreign dominated economy. For example, most of the authors pointed to problems such as drainage and irrigation, over-mechanization, the inadequate use of fertilizers, insecticides, weedicides and so on, as the major problems facing the rice industry.

The following are some of the works which focused on the internal problems of underdevelopment within the productive process of the rice industry in Guyana. Richardson (1970), *The Rice Culture of Coastal Guyana*. Nath (1970), *The History of the Indians in Guyana*. Dumont (1963), *Planning Agricultural Development*. O'Laughlin (1958), "The Rice Sector of the Economy of British Guiana." Kundu (1964), "Rice in the Caribbean Islands and British Guiana." Newman (1964), *British Guiana*. Madramootoo (1973), *Our Rice Industry*. Hanley (1975), "Rice, Politics and Development in Guyana." Vining (1976), "The Rice Economy of Government Settlement Schemes in Guyana."

What they failed to recognize, however, was that the rice industry does not depend *directly* on capital development from the outside which direct the forces of development, or more appropriately underdevelopment, in Guyana.

The difficulties in the rice industry are primarily structural and secondarily internal. No amount of piece-meal changes (see Chapter V) can alter the present problem that is currently facing the industry. Ramsahoye (1970) for example argues for "better packing" and new "product development" to increase sales. Nath (1970) on the other hand argues for better prices from the Caribbean market. The IBRD study further recommended "better seeds, fertilizers, crop rotation" and so on (1953:149) as means of eliminating the problems. In short, the problem in development of the industry is entirely internal.

Second, there are five studies (Reno 1964; Mandle 1974; Ramgopaul 1964, 1968; Ramlakhan n.d.; and Jagan 1966) that have shown that such emphases are not only confusing and misleading, but are false. They argue that the problems of Guyana's underdevelopment are to be found in its colonial history and the historical forces that shaped it. Mandle, for example, argues that the "government in Guyana was a function of metropolitan interest." Jagan in his analysis went even further and showed that the British and American interests penetrated the ideology of the ruling elite in Guyana. Jagan's attempts (as Premier of British Guiana) to diversify and shift the base of the economy away from multinational interests, i.e., sugar and bauxite, were frustrated.

When it became evident in the early 1960's that such frustrations could not easily erode Jagan's popularity at home, the Central Intelligence Agency (CIA) intervened. The arguments are straightforward and simple. Guyana's state of underdevelopment is due to the historical domination of the major sector of the economy by foreign multinational corporations whose sole purpose was the maximization of profits. Any attempts therefore to salvage the economy must begin with the first task of changing the ownership of the means of production, and secondly with the internal organization of the relations of production. The flow of surplus value must be turned inwards--either on a national or a regional scale. It is only on this basis that we can hope to reconstruct the economy and eliminate the problem of the low level of production. The rice industry cannot be discussed independently of the organization of other productive sectors--it is a part, an integral part, of the entire economy.

E. PLAN OF THESIS

In Chapter I, an attempt has been made to indicate the nature of this study. In so doing, it was argued that technological innovation does not occur by itself. Rather, it is a medium through which the dominant class in society further entrenches itself in power. What I am trying to demonstrate is that technology is not an independent variable but a dependent one. The attempt will be made in subsequent chapters to show how technology operates in the case of Guyana's rice industry.

Chapter II briefly discusses the historical and geographical background to Guyana. We look at the development of the different forms of production, such as those associated with bauxite and sugar, and how they set the trend toward a dependent economy.

Chapter III focuses on the origin and diffusion of rice and its introduction in Guyana. Essentially the argument counters the popular myth that rice is a "coolie industry." It will show that rice was first cultivated in Guyana by runaway slaves and not by "hill coolies" from Southern India. The later large-scale production of rice by East Indians is accounted for by the plantation political economy. The attempts by the end of the nineteenth century to reorganize the monopolized sugar industry necessitated the production of cheap food. Thus the initial encouragement and facilities for rice cultivation came directly from the sugar interests of the colony. It received further assistance and encouragement as a result of its increased importance to the Caribbean market. The First and Second World Wars effectively established Guyana as the "rice basket" of the Caribbean in the 1960's.

Chapter IV deals with the organizational constraints on the rice industry. As we try to argue, the institutional organization of such bodies as the Guyana Rice Marketing Board (RMB), the Rice Producers' Association (RPA), the Rice Development Corporation (RDC), etc., find their logic and rationale in the colonial government attempts to more closely control the industry. This is because of its increasing importance as a staple, not only in Guyana but also in the Caribbean in general. Any attempts at assistance by the colonial government, therefore, have to be seen in this context. In the 1950's and 1960's, an added dimension was introduced in the form of larger empoldering and drainage and irrigation schemes for increased cultivation.

Chapter V discusses the political and economic constraints on the industry. This initial boost was provided by the PPP government of Dr. Jagan in an attempt to lessen the dependency of the Guyanese economy on the foreign-controlled industries of bauxite and sugar. However, the removal of the PPP from office in 1964 resulted in a chaotic situation, to the extent that even today the industry has not reached a state of stability. This involved the removal of control of the RMB from producers and giving it to civil servants, the end of trade with Cuba, and the removal of subsidies and other assistance. In addition, by the late sixties and seventies, the inflated prices for machinery and fuel and other aids to the industry had placed a further burden on farmers. The subsequent attempts at rejuvenation and reorganization by the government have met with little success and have very few prospects for the future.

Chapter VI begins with a general description of the geographical area and the historical development of Ricetown. This deals partly with the class structure and politics of the village. Here it has been established that the structure of the traditional Ricetown family has survived primarily as an economic unit, while the changing patterns of production have led to drastic changes in other institutions--particularly education and the family. The political and economic changes in the rice industry, as discussed in Chapter V, are reflected at the local village level. The political problems in the mid-1960's which saw the emergence of the PNC as the government resulted in drastic structural and administrative changes. The alleged manipulation of the Local Authorities elections by the PNC government (see Westmas 1971) resulted in the political alienation of the majority of poor farmers in the area.

Chapter VII begins with a historical discussion of the tools and technology involved in rice production in Ricetown. It traces in order the different steps--from land preparation to processing--involved in rice production and the types of tools and technology used at these different stages.

Chapter VIII follows the order of Chapter VII but the discussion is restricted to the technology in use at the present time.

Chapter IX is a series of recommendations. It is hoped that these recommendations will be used as guidelines to assist in the general development of the rice industry. The Guyanese government in recent years has strongly advocated socialism and claims to be the first cooperative republic in the world. One may question if Guyana is seriously interested in building a cooperative society. If so, then cooperativism must begin from the bottom, by direct participation by the majority of the people and not expressed bureaucrats. Secondly, if Guyana wants to build a socialist society it must begin by transferring the means of production into the hands of the workers in the major industries of sugar, bauxite and rice. Socialism is participation, not alienation.

CHAPTER II

GEOGRAPHICAL AND HISTORICAL BACKGROUND OF GUYANA

A. INTRODUCTION

In this chapter I will trace the history of the occupation of the coastlands of Guyana. During the early colonial period, the absence of significant quantities of gold led to the early introduction of crops such as coffee, cotton, tobacco and, later, sugarcane, which contributed to the peopling and developing of the area. The fifty-year period, 1781-1831, saw control of the colonies of Essequibo, Demerara and Berbice transferred among the Dutch, French and British seven times until they were ceded to the British in 1803. Final unification came in 1831 (see Table I).

The failure of the Europeans to enslave the native Amerindians forced European planters to seek an alternative source of cheap labour. Indentured workers from Europe first filled these labour needs on the plantation, but they were followed by African slaves, and later by Portuguese, West Indian (mainly from Barbados, St. Kitts and Antigua), Chinese and East Indian indentured workers. Thus, it was the need for cheap agricultural labour which resulted in the development of Guyana's heterogeneous population (see Table II).

Climatic conditions and topography have played important roles in determining the types of crops that could be grown, and the types of tools and technology that could be used in their cultivation. These

TABLE I

ACTIVE OCCUPATION OF ESSEQUIBO, DEMERARA AND BERBICE BY EUROPEAN POWERS FROM 1621 TO 1831

From	To	European power
1621	1781	Dutch
1781	1782	British
1782	1783	French
1783	1796	Dutch
1796	1802	British
1802	1803	Dutch
1803	1815	British
1815	Final secession to the British	
1831	Formal unification	

Source: Compiled from data provided by Farley 1955c.

TABLE II

POPULATION BY SEX AND ETHNICITY

Ethnic origin	Male	Female	Total	Percentage
Amerindian	17,137	17,165	34,202	4.9
European	1,142	1,044	2,186	0.3
African	106,729	111,672	218,401	31.2
Portuguese*	2,750	2,913	5,663	0.9
Chinese	1,912	1,490	3,402	0.4
Syrian	30	22	52	0.0
East Indian	182,186	180,550	362,736	51.9
Mixed	35,535	36,782	72,317	10.3
Other	161	122	283	0.0
Not stated	266	236	502	0.0
TOTAL	347,848	351,996	699,844	99.9

*Portuguese in Guyana are distinguished from other Europeans.

Source: Compiled from Population Census of the Commonwealth Caribbean: Race and Religion 7:17-24, 1970.

topographic features of the coastland region of Guyana present two distinct advantages for mechanical cultivation in wet rice agriculture. First, the flat coast is ideal for the establishment of a drainage and irrigation network and, second, flat lands along Guyana's coast also facilitate the use of tractors and combines, which are impractical on steep, hilly surfaces.

Other factors, such as soil fertility, climatic conditions and seasonal changes, determine the rhythm of the sowing and reaping seasons. Further, the texture of the soil is important, as it may either help or hinder the efficiency of mechanical operations.

Guyana has very unique demographic characteristics. Because of the historical development of the colony, based primarily on a mono-agricultural economy, the majority of the population resides in the coastal belt. In 1970, 85.9 percent lived on the coastland; 1.1 percent lived on the lower banks of rivers and creeks; 2.6 percent lived on the islands at the river mouths; 2.3 percent lived in the North West District; and 8.1 percent lived in the hinterland. Guyana has two cities: Georgetown, the capital of approximately 150,000 people; and New Amsterdam which is located on the east bank of the Berbice River and has a population of approximately 32,000. Beyond the coastal strip, there are two populated regions: (1) Bartica, a gateway to the hinterland which became a boom town in the 1880's during the peak of the gold rush; and (2) Linden (formerly Mackenzie), the "bauxite city" of Guyana which started in the mid-1920's.

B. TOPOGRAPHY, SOIL AND CLIMATE

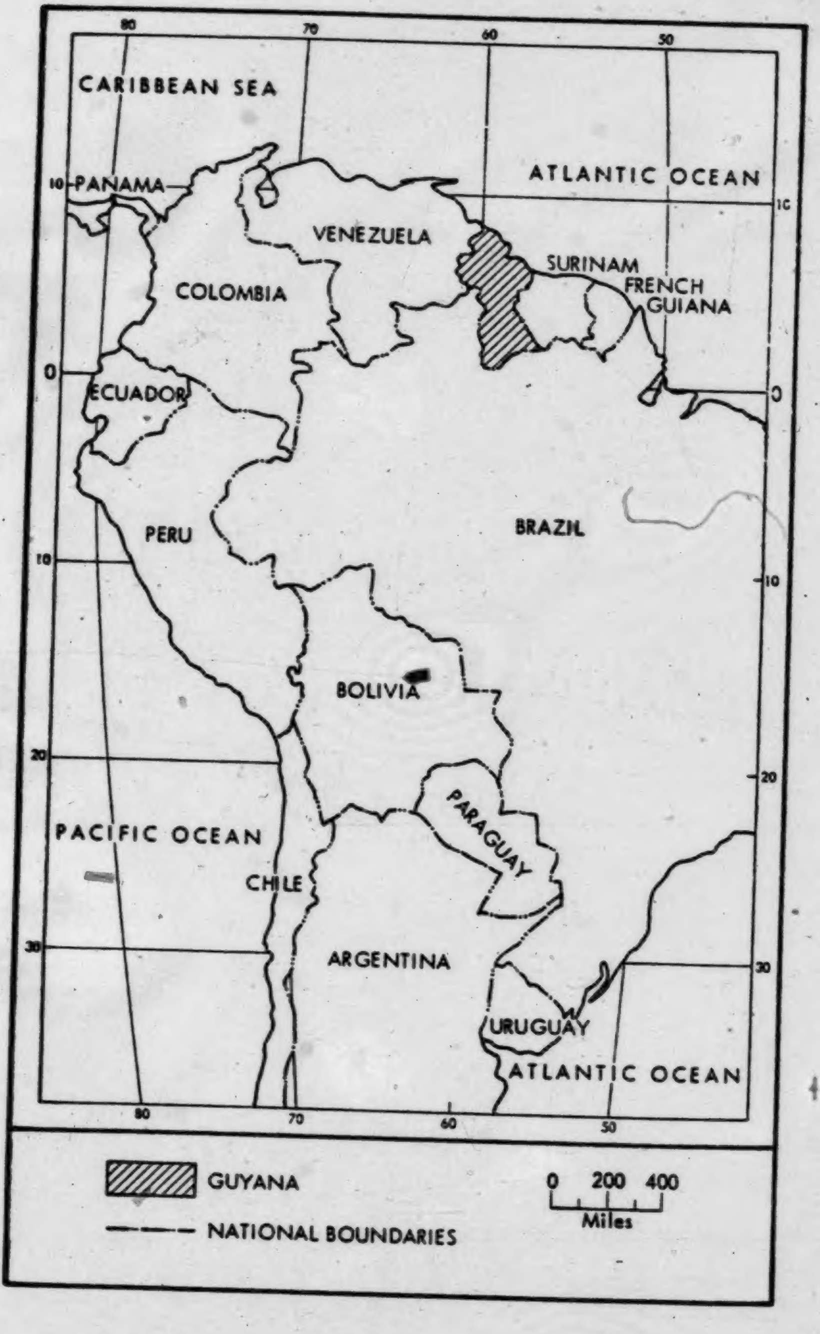
"Guyana," an Amerindian word literally translated "land of many waters," was the name given to the territory lying between the Orinoco and the Amazon Rivers--from 3° 3' South to 8° 40' North Latitude. It is bounded on the north by the Orinoco and the Atlantic, east by the Atlantic, south by the rivers Negro and Amazon, and west by the Orinoco and the Cassaquine. It covers an area of approximately 690,000 square miles. This vast territory has been divided up into Brazil, Venezuela, Guyana (formerly British Guiana), Surinam (formerly Dutch Guiana), and French Guiana (see Map I).

Guyana occupies an area of approximately 83,000 square miles. It is bounded on the north by the Atlantic, east by Dutch Guiana (Surinam--separated by the Corentyne River), south and southwest by Brazil, and west by Venezuela. It lies 0° 40' to 8° 40' North Latitude and 57° to 61° West Longitude (see Map II). Until unification in 1831, the country comprised three different colonies, named after the three principal rivers which drain them--Essequibo, Demerara and Berbice. These former colonies are now called counties, with Berbice extending from the Corentyne River to the Abary Creek, which includes the Berbice River. Demerara extends from the Abary to the Boeraserie Creek, including the Demerara River, while Essequibo extends from Boeraserie to the mouth of the Waini Creek.

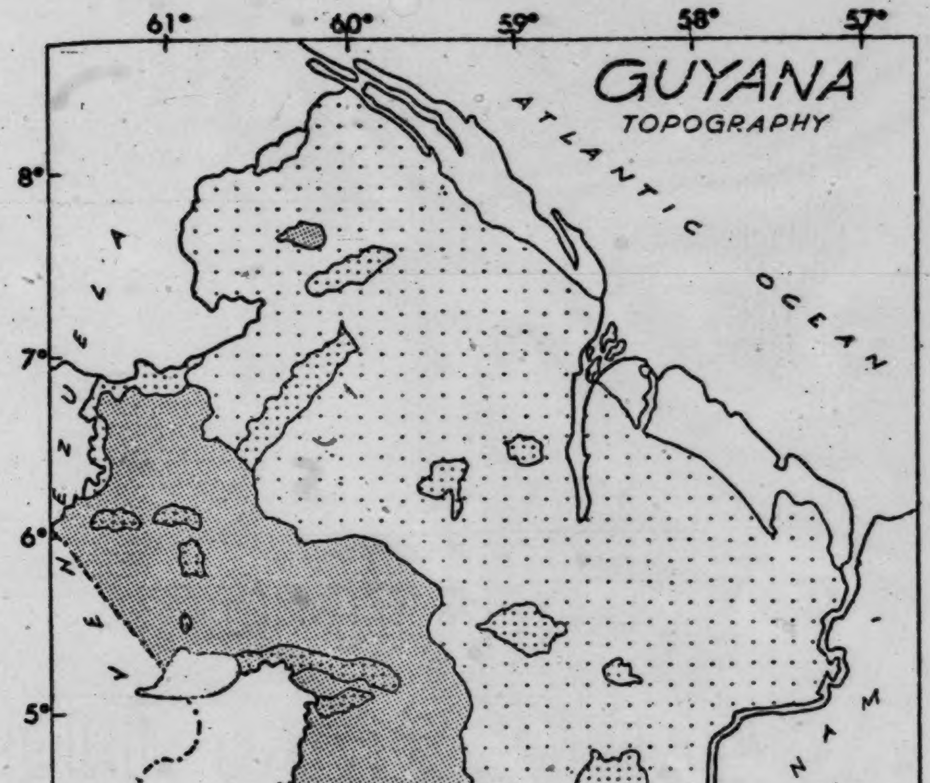
Guyana lies within the equatorial belt (outside of the hurricane zone) and within the sphere of the North East Trade Winds. The climate and seasonal changes are greatly influenced by the apparent migration of

MAP I

MAP OF SOUTH AMERICA


CARIBBEAN SEA
ATLANTIC OCEAN
PANAMA
VENEZUELA
SURINAM
FRENCH GUIANA
COLOMBIA
ECUADOR
PERU
BRAZIL
BOLIVIA
PARAGUAY
PACIFIC OCEAN
CHILE
ARGENTINA
URUGUAY
ATLANTIC OCEAN
80
70
60
50
10
0
20
30
GUYANA
NATIONAL BOUNDARIES
0 200 400
Miles

MAP II


GUYANA
TOPOGRAPHY
61°
60°
59°
58°
57°
8°
7°
6°
5°
4°
3°
2°
ATLANTIC OCEAN
VENEZUELA
SURINAM
BRAZIL
BRAZIL
KEY
3000-5000 ft.
1000-3000 ft.
500-1000 ft.
0-500 ft.
Below sea level
0 10 20 30 40 50 60 miles

of the sun--north to south--between the Tropic of Cancer and the Tropic of Capricorn, which results in four distinct seasons: (1) a long wet season from March to July; (2) a long dry season from August to mid-November; (3) a short wet season from mid-November to January; and (4) a short dry season from January to March (see Figure 1). The country enjoys very high precipitation, with an average of over 80 inches of rainfall annually. The temperature on the coastlands is uniformly high, never falling bellow 60° F nor rising above 90° F. This climatic stability is due primarily to the influence of the strong North East Trade Winds. The climate in the hinterland is not as uniform and rainfall is sometimes as low as 40-50 inches annually, with temperatures on mountain ranges falling as low as 25° F (Poonai 1966:166).

These seasonal changes strongly influence the sowing and harvesting patterns and result in the characteristic seasonal underemployment which is due partly to Guyana's dependence on the plantation economy.

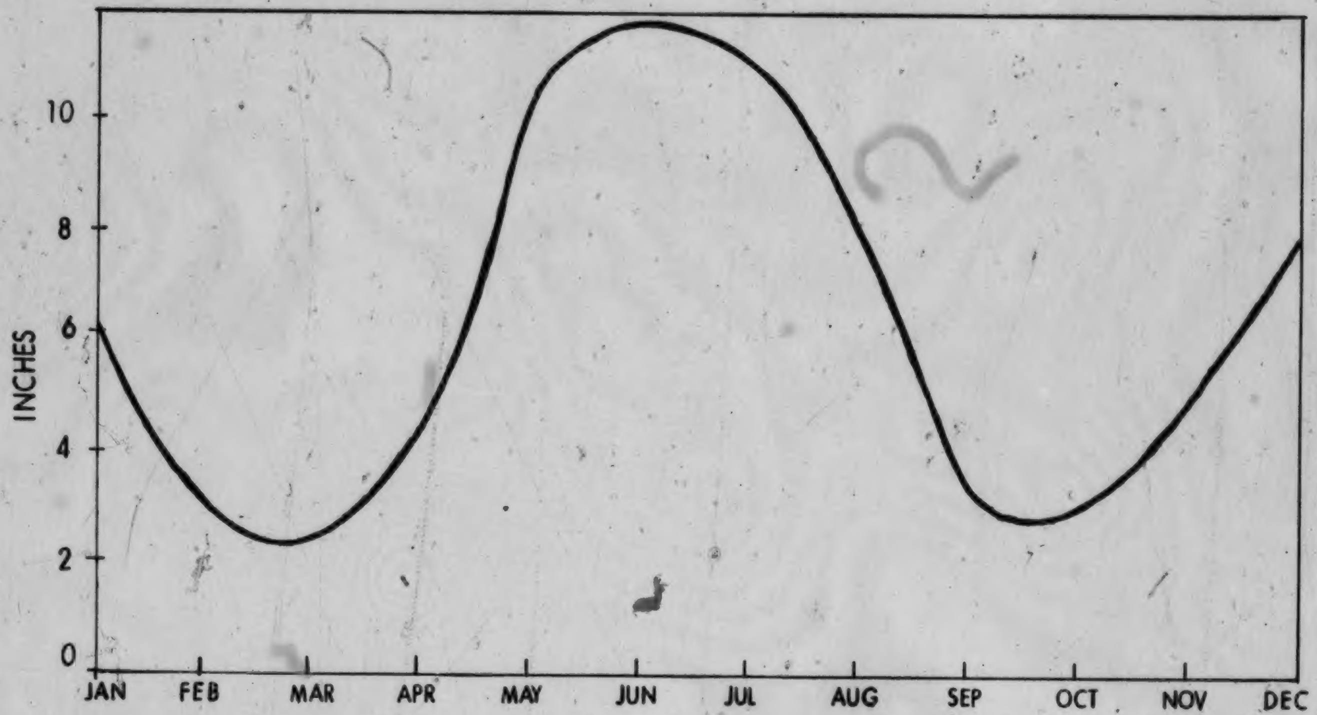
Topographically, the country could be divided into five different units (King 1968:8):

(i) The Coastal Belt
(ii) The Lowland Region
(iii) The Pakarima Mountain Range
(iv) The Southern Upland Region
(v) The New River/Corentyne Area

With some exceptions, each topographic unit exhibits a characteristic soil type and vegetation.

FIGURE 1

AVERAGE MONTHLY RAINFALL, 1956 - 1971
PLN FARM, E.B.D.



Source: Annual Reports
Ministry of Works & Communications

The Coastal Belt

The coastal belt varies in width (see Map II) from about half a mile on the Essequibo River to about forty miles on the Corentyne River. Most of the coastal belt is about five feet below sea level and an elaborate system of earthen dams and concrete walls is necessary to protect the coast from flooding (ibid.:7), especially during the high tides in August and in October. The soil in the coastal areas is referred to as "coastal clay" and is excellent for agricultural purposes. The fertility of the soil along the coast helps to explain the historical development of the sugar plantations along the coast (Vining 1975:5) which in turn helps to explain the present demographic pattern.

The Lowland Region

Behind the coastal belt lies the lowland region. This area is an intersected peneplain with small hills rising no more than five hundred feet. The lowland region covers the largest area in the country. Not all of the lowland region is suitable for agricultural purposes. However, lands in the lowland region which were once considered unsuitable for agricultural purposes are now under cultivation, such as along the Georgetown-Linden Highway where large tracts of land are being used for growing pineapples and other cash crops. In the lowland region, most of Guyana's forest is found. It is in this region in which the intermediate savanna in the east and the Rupununi savanna on the south are located. According to King (1968:21), the main vegetation types are: dry evergreen forest, rain forest, marsh forest, swamp forest, seasonal forest, and savanna.

The Pakarima Mountain Range

The Pakarima Mountain Range extends for approximately one hundred and sixty miles along the Venezuelan/Brazilian border and is about seventy miles wide. Here lies the highest peak, Mount Roraima, 9,094 feet. Both the soil and the vegetation vary: dry evergreen on the sand stones and sediments, rain forests on the red earth, marsh forests around the creeks and tributaries and swamp forests on the alluvial flats.

The Southern Upland Region

The southern upland region is between eight and fifteen hundred feet above sea level. It is generally accepted that most of this area is not suitable for agricultural purposes. Seasonal forests occur in the foothills of the region; dry evergreen forests on the steep rocky slopes; and savanna on the lower hills; while areas with impeded drainage are under marsh and swamp.

The New River/Corentyne Area

The New River/Corentyne area exhibits features similar to those in the lowland region. The hills are no more than eight hundred feet high. The soil is a mixture of coastal clays, and laterite clays and silt clays. The primary vegetation in this area is dry evergreen forests.

C. COLONIZATION: FROM THE DUTCH TO THE BRITISH

The early history of British Guiana (until unification in 1831) is the history of three separate colonies--Essequibo, Demerara and

Berbice.* The first mention of unification was made in 1781 during a brief occupation of the colonies by the British. Prior to this occupation, "the Dutch were in effective occupation of this territory for just over three centuries" (Farley 1955c:21). However, although the Dutch had established occupation over the area, other European nations were known to have established short-lived settlements. The main factor to which we could attribute the Dutch influence in the colonies was the presence of the Dutch West India Company. The Company was granted a Charter in 1621 which remained in force until 1791 when renewal was denied (Daly 1966:80). Dutch influence in the colonies coincides with the rise and fall of the Dutch West India Company.

During the first brief occupation by the British in 1781-82, Dutch citizens in the colonies took the Oath of Allegiance to the British Crown (Farley 1955c:21; Daly 1966:78). After less than a year of British occupancy the French captured the colonies and began constructing the first major town in the colonies. They named the town Longchamps. When the colonies were restored to the Dutch a year later they renamed the town Stabroek (the name which the central market bears to this day), after the name of the President of the Dutch West India Company. When the colonies were finally ceded to the British the town was renamed Georgetown (Schomburgh 1970:86).

It is beyond the scope of this study to present a detailed historical, political, economic and social analysis of the fifty years of European rivalry prior to formal unification of the three colonies. However, as far as the plantation economy was concerned it is important to recognize the natural advantages that existed on the coastlands of South America as contrasted with the islands in the Caribbean. First, the colonies on the mainland were free from hurricanes, and possessed an enormous amount of unoccupied land with excellent climatic and soil conditions. Secondly, there existed on the coastlands the potential for supplying labour with cheap (ground) provisions for consumption. Third, internal transportation of crops was by water, which was much cheaper than transportation by land. And finally, "the same number of labourers [in Guyana] could produce every commodity in the Caribbean Islands more cheaply and abundantly and with less exertion" (Farley 1955c:33). The natural advantages were somewhat exaggerated by William Hillhouse in 1829 when he stated that "little more was required than to plant in the rainy and to reap in the dry season and the Earth gave her increase without manure, the plough or the harrow" (cited in Farley 1955c:33).

---

*Essequibo and Demerara were united in 1787 under a Single Court of Policy and were joined by Berbice in 1831 when the colony of British Guiana was formed.

There are a number of causes behind the penetration of the British into the colonies on the mainland. First, there was the decline of the influence of the Dutch West India Company and its inability to actively utilize the resources available, i.e., the physical occupation of the land. Secondly, there was the "open-door" policy of Strom van s'Gravesande, Director of the Dutch West India Company, which attracted British planters, especially from Barbados and Carolina (Harris and DeVilliers 1911:252-276). Finally, there were the natural conditions (as discussed above) which were an added incentive. Thus, by 1802, of the total of seven thousand Europeans living in the colonies of

Essequibo and Demerara, five thousand were British, and their property had a value of approximately £15,000,000 (Farley 1955c:38).

At the Treaty of Amis in 1802 when the British returned the colonies to the Dutch, the British planters in the colonies petitioned to the Secretary of State for the Colonies, expressing their fear of having large capital investments in Dutch-governed colonies. The British planters wanted protection, not only for the capital invested but also to ensure that the goods produced would reach the English markets. In 1795 the planters in the three colonies produced 10,250,000 pounds of cotton; 25,000,000 pounds of coffee, and 15,001,000 hogshead of sugar (ibid.:29). But the British planters were not in the colonies alone; both the financial houses and the manufacturing sector had vested interests. From 1797 to 1801 the number of British ships that called at the ports of Essequibo, Demerara and Berbice increased from 32 to 200. British merchants were also actively assisted in developing lands, especially after 1782 when the colonies first became protectorate of the British Crown. As John Turnbull noted, the colonies became "extensively cultivated, highly productive, and very essential importance to the trade and manufacture and the revenue of Great Britain" (ibid.:36). Besides the investments and the profits extracted, the potential for further extraction seemed very lucrative. As a result, the planter class and their allies were determined to legitimize political control over the area. The interest of the British in the colonies were best expressed by George Baillie in a letter to John Sullivan on May 21, 1803, which stated:

> The value of Demerara to this country [Britain] is well known, as is also the immense sum of British capital engaged in it. Its not being taken by us immediately will be attended by the most serious consequences to many [financial] Houses in London, Liverpool and Glasgow, and I may safely venture to say that thirty principal [financial] houses and many lesser ones will stop payment if we are not very soon in possession of it (ibid.:41).

The colonies were finally ceded to the British in 1803.

D. EMANCIPATION, LABOUR AND THE EMERGENCE OF THE PEASANTRY

As pointed out earlier, the planters of British Guiana were faced with one haunting problem, and that was the constant shortage of labour. The main reason for this problem, according to Eric Williams (1944), was that British Guiana passed too late into the hands of the British and thus lost the opportunity of alleviating its labour shortage through the slave trade. In 1833, two years after the unification of the colonies, a sharp controversy developed between the planters of British Guiana and the imperial government over the question of emancipation. The planters argued that emancipation would lead to a massive withdrawal of the emancipated slaves from the coastlands (Farley 1955c:56). In an attempt to meet the demands for labour in British Guiana, the British government, in 1811, suggested that they recruit Chinese indentured workers. The planters refused to accept Chinese workers on the ground that the Chinese indentured workers would be seduced by rum at a dollar a gallon and would eventually be no better than the free slaves. They further argued that the only way out of this problem was to force (by law) each person to work (Webber 1938:

169; Farley 1964:56). It is beyond the scope of this study to enter into any detailed discussion of whether or not the emancipation of the slaves was a moral issue or an economic necessity.* However, there are two crucial points that I would like to note. As a result of the decision made by the British government to emancipate the slaves in the British colonies, the planters were given two boons. First, there was the passage of the *Apprenticeship Act*. This Act states that the slaves, although emancipated, must continue working for their masters for an additional four years--from 1834 to 1838. According to the New World Webster Dictionary, "apprenticeship" means (a) a period of training, and (b) a learner or beginner. The question could be asked: why apprenticeship? Is it that the ex-slaves had to undergo a period of training to be free? The answer is, "certainly not." The Apprenticeship Act was designed to appease the fears of the planters, who felt that after emancipation the ex-slaves would "scatter into the interior and adopt the wandering life" (Farley 1953:105). Elsewhere, Farley (1954:56) noted that the "virtual disappearance of free labour would rob them [the planters] of labour supply so necessary for the maintenance of high cost fixed capital and for the continuance of production to meet these costs and recurrent expenditure." Not only was the idea that emancipation would lead to "massive withdrawal" unfounded, but it also shows an ignorance of the economic structure of the plantation society. British Guiana, like the rest of the Caribbean, exhibited a plantation-

---

*For opposing discussion see Eric Williams (1944), *Capitalism and Slavery*, and Wallbridge (1840), *The Demerara Martyr*.

monetized economy, and cash was required to purchase the basic items needed for survival. Thus, the majority of the ex-slaves (even after the end of their apprenticeship period) were economically tied to the plantations. King (1968:79) pointed out that of the total of 148,026 Negroes who were living in the colony in 1861, 59,176 were living in villages of their own creation, 55,907 were still working on estates and the remainder were in towns.

The apprenticeship period had another distinct advantage for the planters: it allowed them to seek an alternative source of cheap labour.

Secondly, the planters in the British colonies received *Compensation*. This in effect meant that the planters, in agreeing to emancipate the slaves, received double payments: one through compensation and the other through the four years of apprenticeship. In British Guiana, the planters besides receiving £4,924,989 as compensation (Deerr 1950:306) were also granted the free labour of 82,000 people for four years.

Emancipation did not create a shortage of labour; what it created was easy access to *cheap labour*. Webber (1938:197) pointed out that had one quarter of the money that was given to the planters as compensation been spent on a sane immigration project, the problems of labour shortage on the plantations would have been solved. The question could be asked: why immigration? Could the planters not create attractive conditions on the plantations and induce the ex-slaves to remain and work? Open conflict between the ex-slaves and the planters came in 1842. According to John Chandler:

> . . . the planters formed a union to depress wages: the labourers formed a union to resist them: wages were reduced, but Sir Michael McTurk broke through the regulations and the object for the time was defeated. During this contest, some of the Managers of the Estates ejected the labourers from their dwellings, and others feared that their masters to [sic] do the same: this led to the purchase of land by joint stock companies for the *formation of free villages*. In 1846 a new Planters Union was formed: many labourers were again turned out of their houses; *wages were, in reality, beaten down* and the people discouraged and buffetted commenced the village of "Friendship" which has drawn of the Estates about 1600 inhabitants (Borome 1964:58).

A number of conclusions could be drawn from Chandler's observation: one, the free slaves were not prepared to continue to play the role of docile labour on the plantations. Two, the planters actually pushed many of the ex-slaves out of the plantations, thus contributing to the growth of villages in British Guiana. Three, and most important, the question could be asked, why was it that the Planters' Union of 1846 was more successful than that formed in 1842? The answer lies in the fact that before 1842 only 19,807 immigrants had arrived in the colony and the ex-slaves still formed the backbone of the work force. By 1846 the number of immigrants had doubled. In that year alone 4,019 workers arrived from India, 5,975 arrived from Madeira, 428 from the West Indies, and 1,097 from Africa (Nath 1970:219-220). The planters had used the immigrants to break the bargaining power of the ex-slaves.

As a result of their eviction from the plantations, migration of ex-slaves to the villages became significant and from 1844 to 1848 the number of freehold cottages doubled. The populations of Victoria, Buxton, Plaisance and Queenstown increased over three hundred percent (Daly 1966:179). The labour vacuum created on the plantations by the exodus of the ex-slaves was filled by the incoming immigrants--primarily

East Indians.

The planters made every attempt to separate the Africans from the East Indians. If a physical and social separation could be maintained, it would be possible to exploit both groups by setting one against the other. In some cases, Africans were used to police the plantation, in the same manner as the planters had earlier used the Amerindians against the Africans. The social and physical separation of the East Indians is expressed in Jenkins' famous passage:

> The great community . . . lives by itself, is shut in with itself must find its news and amusement as well as its task out of itself. Take a large factory in Manchester, Birmingham, or Belfast, build a wall around it, shut in its working people from all intercourse, save at rare intervals, with the outside world. Keep them in absolute heathen ignorance and get all the work you can out of them, treat them not unkindly, leave their social habits and relations to themselves, as a matter of not concerning you who make money out of their labour, and you will have constituted a little community, resembling in no small degree a sugar estate village in British Guiana (cited in Glasgow 1970:20).

Many of the early indentured workers, upon completion of their "bound piece," returned to their homeland, as a means of escaping the drudgery of the plantation life. Many remained on the plantations, while a few moved out and settled in villages around the plantations. The more educated ones, who acted as interpreters and "sardars" (drivers), enjoyed a higher social status and accumulated more money. They purchased or leased entire villages and became pioneers of the land-owning class. Thus by the beginning of the last quarter of the nineteenth century many East Indians had joined their predecessors--the Africans--as small independent peasant farmers.

The planters, in consort with the government of British Guiana, used every possible method to entice the East Indian immigrants to remain in the colony. Their movement from the colony was not only creating an economic problem in the colony, as they were taking considerable sums of money with them (Nath 1970:221-223), but was also creating a vacuum in the labour market. (By having the East Indians remain on the plantation the planters were killing two birds with the same stone, that is, besides meeting the need for cheap resident labour, they were also "peopling" the colony.) To this end, the immigrants were offered small plots of land on the periphery of the plantations in lieu of return passages to India (for further discussion, see Chapter III).

As mentioned earlier, Guyana, for all practical purposes, is an agricultural country. In 1960, only 29% of the total population were urban dwellers (Robinson 1966:68). Both the sugar and the rice industries are large-scale employers of agricultural labour. However, it is interesting to note that while the sugar industry has increased its production, it has reduced the number of workers employed. According to Kwayana, "the average number of workers declined from 24,835 in 1965 to 16,925 in 1966" (1966:25), a decline of 31.8 percent, or 7,910 workers. Most of these individuals moved out of the sugar plantations and settled in villages or in newly opened government rice schemes such as Black Bush Polder on the Corentyne Coast. Jainarain (1976:256) noted that there were twenty thousand rice-growing families in 1952, and that by 1965 that number more than doubled, reaching approximately fifty thousand families.*

---

*Because of the changing patterns of rice production I would suggest that the term "families" is not as appropriate today as it was in the early 1950's.

Jainarain (ibid.:196-198) further pointed out that in 1965 the bauxite industry employed 2.6 percent of the work force, or approximately 3,500 workers. Table III gives an indication of the economic importance of the major industries in Guyana, and how much each commodity contributes in terms of foreign exchange. There is, however, one important point which must be taken into consideration if we are fully to understand the economic importance of the rice industry to the national economy. Approximately fifty percent of the rice produced is consumed in Guyana.* We could ask what percentage of the bauxite or sugar produced in Guyana is consumed by the Guyanese population. Thus, Table III gives only one-half of the importance of rice in Guyana's economy.

E. THE SUGAR INDUSTRY TECHNOLOGY

At first, sugarcane was crushed between wooden rollers by hand or, in a small way, by levers bearing a flag log. The first horse-powered sugarmill was erected by Jan Doenson in 1664 in Essequibo. This became the most common mode of extraction of cane juice where water power could not be obtained. Sugar- and windmills were introduced together on the coastlands (which have borne their mark well into the mid-twentieth century). According to Deerr (1950:552-553), Boulton and Watt, standard manufacturers of sugarcane mills, were established in 1802 and by 1852 had built 148 engines. The two main purchasers were

---

*This figure does not include the amount of rice kept by the farmer for his personal consumption, nor does it include paddy used by farmers for poultry or animal feeds or for seed.

TABLE III

EXPORTS OF ARTICLES PRODUCED IN GUYANA

Year	Sugar and its by-products (000 omitted)	Rice (000 omitted)	Bauxite (000 omitted)	Gold and precious metals (000 omitted)	Other products (000 omitted)	Total (000 omitted)	Percentage of exports: Sugar and its by-products	Rice	Bauxite	Gold and precious metals	Other products	Total
	$	$	$	$	$	$						
1866	9,783	—	Figures prior to 1939 not available separately. Included under "Other Products"	—	638	10,421	94	-	Not available separately prior to 1939	-	6	100
1870	10,560	—		—	3,260	13,820	76	-		-	24	100
1875	10,066	—		—	1,152	11,218	90	-		-	10	100
1880	11,210	—		—	1,355	12,565	89	-		-	11	100
1885	7,801	—		16	827	8,644	90	-		-	10	100
1890	8,337	—		1,125	915	10,377	80	-		11	9	100
1894-95	6,554	—		2,402	1,036	9,792	67	-		25	8	100
1899-1900	6,385	—		1,990	879	9,254	69	-		19	12	100
1905-06	6,627	—		1,714	449	8,791	75	-		20	5	100
1906-07	5,854	89		1,565	456	7,964	74	1		20	5	100
1907-08	5,407	191		1,163	656	7,417	73	3		16	8	100
1908-09	1,776	240		1,325	742	9,383	75	3		14	8	100
1909-10	6,587	310		1,147	740	8,784	75	3		13	9	100
1910-11	5,593	243		976	1,003	7,815	72	3		12	13	100
1911-12	7,266	193		972	999	9,430	77	2		10	11	100
1913	6,410	510		1,462	1,186	9,566	67	5		15	13	100
1914	8,742	493		1,201	877	11,313	77	4		11	8	100
1915	12,124	643		987	1,080	14,834	82	4		7	7	100
1916	13,115	1,044		792	1,189	16,140	81	6		5	8	100
1917	14,783	1,423		704	1,344	18,254	81	8		4	7	100
1918	11,230	855		595	1,137	13,817	81	6		4	9	100
1919	14,378	951		660	1,603	17,592	82	5		4	9	100
1920	21,728	1,131		1,162	2,065	26,086	83	4		4	[illegible]	100
1921	11,875	284		1,869	1,425	15,453	77	2		12	9	100
1922	7,374	602		4,038	1,109	13,123	56	4		31	9	100
1923	10,462	274		5,062	1,598	17,396	60	1		30	9	100
1924	8,959	313		4,196	2,086	15,554	57	2		27	14	100
1925	7,469	524		4,189	2,060	14,242	53	4		29	14	100
1926	6,570	218		3,399	2,061	12,248	53	2		28	17	100
1927	9,465	724		3,714	1,761	15,664	60	5		24	11	100
1928	8,895	1,114		2,595	1,947	14,551	61	8		18	13	100
1929	6,604	876		2,378	2,136	11,994	55	7		20	18	100
1930	5,986	1,090		1,521	1,575	10,172	59	11		15	15	100
1931	6,036	1,060		805	1,368	9,269	65	11		9	15	100
1932	7,120	1,188		923	1,119	10,350	69	11		9	11	100
1933	6,553	1,062		1,185	889	9,689	68	11		12	9	100
1934	6,333	583		1,159	797	8,882	71	7		13	9	100
1935	7,662	473		1,342	1,166	10,643	72	4		13	11	100
1936	7,925	810		1,414	1,551	11,700	68	7		12	13	100
1937	8,447	784		1,430	2,476	13,137	64	6		11	19	100
1938	8,350	577		1,408	2,724	13,059	64	4		11	21	100
1939	8,865	583	2,889	1,485	700	14,522	61	4	19	11	5	100
1940	8,074	709	4,024	1,306	803	14,916	54	4	27	8	7	100
1941	9,340	584	6,986	1,364	1,028	19,302	46	3	36	7	6	100
1941	8,089	1,829	7,215	998	1,066	19,097	42	10	37	5	6	100
1943	8,466	1,700	10,900	746	1,373	23,185	37	7	47	3	6	100
1944	13,263	2,665	5,412	572	2,097	24,009	55	11	17	3	9	100
1945	12,280	2,766	3,661	833	2,043	21,383	58	13	23	4	8	100
1946	14,322	2,450	6,063	1,634	2,232	26,701	54	9	23	6	8	100
1947	21,564	2,302	6,739	1,366	2,546	34,507	62	7	19	4	8	100
1948	20,337	2,060	9,512	1,855	2,791	36,355	55	6	26	5	8	100
1949	26,257	3,098	12,009	2,057	2,355	45,806	57	7	26	4	6	100
1950	27,390	3,962	13,832	1,982	3,113	50,279	55	8	27	4	6	100
1951	31,162	4,382	16,417	2,378	3,701	58,040	54	8	28	4	6	100
1952	45,593	6,085	22,240	2,517	4,404	80,839	56	7	28	3	6	100
1953	41,600	9,527	23,535	2,587	4,263	81,512	51	12	28	3	6	100
1954	44,797	9,278	23,235	2,643	4,563	84,074	53	11	27	3	5	100
1955	44,151	12,516	24,787	2,737	2,569	89,041	50	14	27	3	5	100
1956	46,363	9,858	29,335	2,246	5,543	93,343	50	11	31	2	6	100
1957	59,769	9,167	29,156	2,333	6,234	107,019	56	9	27	2	5	100
1958	60,732	4,785	20,562	2,486	7,785	97,541	63	5	21	3	8	100
1959	52,217	12,536	24,789	3,066	9,414	103,881	51	12	24	3	10	100
1960	63,266	15,402	29,496	4,756	15,291	126,994	50	13	23	4	10	100
1961	62,601	22,626	28,475	5,134	29,496	148,249	42	15	19	3	21	100
1962	66,499	20,469	31,113	3,707	29,513	163,654	41	13	19	3	22	100
1963	82,336	20,091	28,499	3,532	38,864	172,926	47	12	16	3	22	100
1964	61,188	21,847	30,782	4,473	44,234	162,555	37	13	19	3	28	100
1965	50,819	23,038	37,379	5,778	47,641	164,664	31	14	22	4	29	100
1966	54,672	24,869	44,586	5,098	53,370	182,595	29	14	29	4	24	100
1967	59,239	24,035	45,643	6,154	62,427	197,519	30	12	23	3	32	100
1968	63,555	26,147	58,158	4,714	63,746	216,320	30	12	27	2	29	100
1969	88,177	19,670	62,617	3,798	67,755	242,017	36	8	26	2	28	100

Source: Nath 1970.

Jamaica, with 56, and British Guiana, with 54. Another firm, Messrs. Fawcett, Preston and Co., from 1813 to 1817 built 80 cane engines of which Demerara along purchased 42. British Guiana became the first colony in the British West Indies to proceed towards the intensive usage of machinery. Mechanization started in 1805 and British Guiana became known for some of the best "pan boilers" in the Caribbean. The introduction of higher levels of technological input led to the displacement of labour (David 1969:134-140).

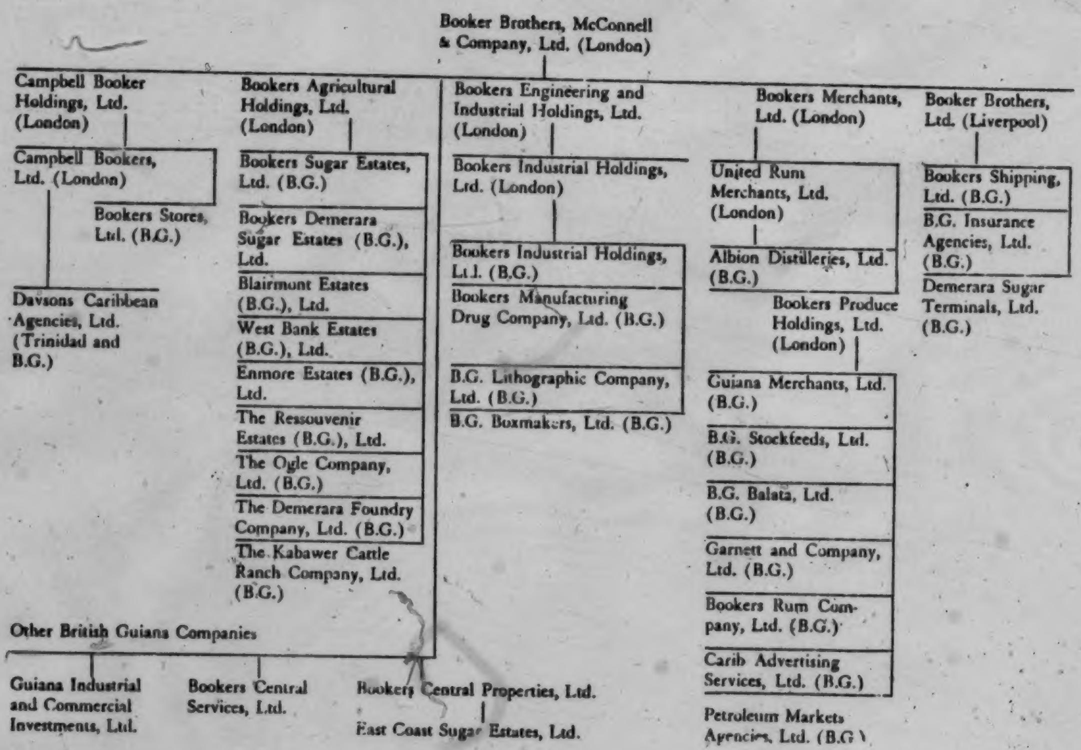
The tools used by the field workers have not changed very much--the shovel, fork, hoe and cutlass are still the tools of the day, though many changes have taken place in the actual processing of sugar over the past century and a half.

There is an interesting correlation between the colonies that were granted the highest compensation for the emancipated slaves and the colonies that purchased the most machinery. British Guiana and Jamaica received approximately £50 per slave as compensation and they were also the two colonies which purchased more than 90 percent of the machinery (Deerr 1950:552, 553). The other colonies received less than half of what British Guiana and Jamaica had received and purchased only about one-tenth of the machinery.

The decrease in the number of sugar estates from 1838 to 1946 (Nath 1970:82) led to a monopoly of the sugar industry in British Guiana by Booker Bros., McConnell and Company Limited. The holdings of the Booker Group penetrated every sector of the country's economy (see Figure 2). In 1975, when the government nationalized the sugar industry, Bookers, besides monopolizing the country's sugar industry,

FIGURE 2

BOOKERS GROUP HOLDINGS IN GUYANA


Booker Brothers, McConnell & Company, Ltd. (London)
Campbell Booker Holdings, Ltd. (London)
Campbell Bookers, Ltd. (London)
Bookers Stores, Ltd. (B.G.)
Davsons Caribbean Agencies, Ltd. (Trinidad and B.G.)
Bookers Agricultural Holdings, Ltd. (London)
Bookers Sugar Estates, Ltd. (B.G.)
Bookers Demerara Sugar Estates (B.G.), Ltd.
Blairmont Estates (B.G.), Ltd.
West Bank Estates (B.G.), Ltd.
Enmore Estates (B.G.), Ltd.
The Ressouvenir Estates (B.G.), Ltd.
The Ogle Company, Ltd. (B.G.)
The Demerara Foundry Company, Ltd. (B.G.)
The Kabawer Cattle Ranch Company, Ltd. (B.G.)
Bookers Engineering and Industrial Holdings, Ltd. (London)
Bookers Industrial Holdings, Ltd. (London)
Bookers Industrial Holdings, Ltd. (B.G.)
Bookers Manufacturing Drug Company, Ltd. (B.G.)
B.G. Lithographic Company, Ltd. (B.G.)
B.G. Boxmakers, Ltd. (B.G.)
Bookers Merchants, Ltd. (London)
United Rum Merchants, Ltd. (London)
Albion Distilleries, Ltd. (B.G.)
Bookers Produce Holdings, Ltd. (London)
Guiana Merchants, Ltd. (B.G.)
B.G. Stockfeeds, Ltd. (B.G.)
B.G. Balata, Ltd. (B.G.)
Garnett and Company, Ltd. (B.G.)
Bookers Rum Company, Ltd. (B.G.)
Carib Advertising Services, Ltd. (B.G.)
Petroleum Markets Agencies, Ltd. (B.G.)
Booker Brothers, Ltd. (Liverpool)
Bookers Shipping, Ltd. (B.G.)
B.G. Insurance Agencies, Ltd. (B.G.)
Demerara Sugar Terminals, Ltd. (B.G.)
Other British Guiana Companies
Guiana Industrial and Commercial Investments, Ltd.
Bookers Central Services, Ltd.
Bookers Central Properties, Ltd.
East Coast Sugar Estates, Ltd.

Source: Depres 1966 P. 166

were directly involved in wholesale and retain vending of balata, lumber, petroleum products, groceries, spirits, household furniture and appliances, jewellery, clothing, sporting goods, office and farm equipment and automobiles. They also operated the largest taxi service in the country. In short, every sector of the country's economy was directly or indirectly influenced by the Booker Group. After the 1957 elections the Governor, Sir Patrick Renison, appointed Anthony Tasker, Chairman of the Booker Group in British Guiana, to serve in the Legislative Council.

The sugar and the bauxite (see next section) industries, because of their economic strength, had a serious influence on the course of development in the country.

F. MONOPOLY BAUXITE AND OTHER RESOURCES

Until 1971 when it was nationalized, the bauxite industry in Guyana was controlled exclusively by foreign monopolies. In 1912, Alcoa's President, Arthur V. Davis, learned of newly discovered bauxite in British Guiana. He immediately sent his chief engeer G. B. Mackenzie to investigate the extent of the new findings.* Mackenzie bought up rich ore-laden areas under the pretext of intended citrus fruit farming. In 1916, Alcoa established a subsidiary in Guyana, the Demerara Bauxite Company (Demba),

> . . . for the purpose of acquiring title to several parcels of bauxite-bearing freehold land along the Demerara River

---

*From 1912 until its nationalization in 1971 the area was named Mackenzie.

> between Christianburg and Akyma. In the same year Demba was granted Crown and Colony mining leases covering additional acres of bauxite bearing land in the same district (Roach 1957: 11-12).

Alcoa maintained virtual monopoly of bauxite extraction in British Guiana. Alcoa made it difficult for any other company to establish a holding in the country. Besides having a monopoly on bauxite extraction in the country Alcoa had a strong influence over the colonial government in British Guiana. In an anti-trust suit brought against Alcoa, its influence, not only over the government, but also its corporate links, became clear. According to Joseph Uihlein:

> We found a maze of corporate interests controlled by Aluminum Company (Alcoa) we found the Demerara Bauxite Company . . . we found Canadian Companies, we found the interlocking situation, the mainspring of which seem to be in New York in the office of Arthur V. Davis. That mainspring has its tentacles in England, in Canada--in the world (cited in Girvan 1971:44).

To a somewhat limited extent the Reynolds Metal Company operated along the banks of the Berbice River. Among the bauxite-producing countries, British Guiana was the most exploited in the world (see TableIV). In 1961, the price of bauxite in Surinam went up from $11 to $12 (US) per ton. If British Guiana's bauxite had the same price that year it would have brought over $2 million in taxes from Reynolds and Demba into the government treasury. According to Jagan:

> Bauxite prices in British Guiana remained static for over twenty years . . . . From 1938 to 1959 the general United States price level rose nearly two and a half times. During this time the bauxite produced in the United States doubled. Yet the price of bauxite imported from Surinam and British Guiana was almost the same in 1959 as it was in 1938. But the fact that the companies were holding the price of imported bauxite at a dead level did not prevent them from raising the price of aluminum which went up 78% between 1948 and 1959 (1964:98-104).

TABLE IV

BAUXITE PRICE IN U.S. DOLLARS, 1960 (PER TON)

Arkansas	$12.09
Dominican Republic	12.59
Jamaica	9.48
Haiti	8.90
Surinam	7.72
British Guiana	6.85

Source: Philip Reno, *Ordeal of British Guiana*, p. 101.

The bauxite companies argued that they paid 45 percent of their profits as tax to the government; however, there are points contravening this argument which need careful consideration: (1) For how many years (in the initial stages of development) have these companies been granted tax concessions? (2) The companies purchased all equipment from their parent companies at exhorbitant prices and sold the primary products from the mine at the lowest possible prices to the same parent companies; and (3) Payments for all social overhead expenses were included as "capital expenses" (Lindquist 1972:91-92).

Both the bauxite and sugar companies exploited the political and racial problems during the 1960's to their own gain. They argued that because of political instability in the country the companies could not expand. Although Guyana is the only territory in the Caribbean which has water resources for electric power generation, the companies never seriously considered setting up a hydroelectric plant for smelting bauxite.

On July 15, 1971, after a frustrating period of fruitless negotiating with Demba, the government of the Republic of Guyana nationalized the bauxite company at Mackenzie and renamed it Linden (after the Prime Minister). The nationalization of the industry is still in its infancy. However, every caution must be taken to protect its survival, and also against its development into a state capitalist company. The industry will also be faced with one major external problem, that of how to negotiate profitable sales of bauxite in a world aluminum monopoly system without becoming a victim of the monopoly powers. In response to growing speculation about the problems of nationalization Burnham, the Prime Minister, noted:

> There were fears, even of our friends, as to whether we could manage the undertakings especially after Alcan has ensured all but a few of the expatriate managers will leave. Indeed, thinking about it the exodus of these expatriate managers would be a blessing in disguise for it left us with a managerial complex which was predominantly Guyanese, consisting of Guyanese of proved ability and skill who in the past could never have moded up Alcan's hierarchy (Burnham 1970:3-4).

The nationalization move of the government of Guyana was severely criticized in many Caribbean governments, many of whom are looking forward to leadership from Guyana since the recent developments of the Caribbean Free Trade Association (CARIFTA). Now that the government controls the bauxite industry it is possible that Guyana may in the near future set up her own smelting plant with a possibility of diversity in bauxite byproducts.

According to Case:

> Kaolin which can be used to manufacture chinaware, glass and fillers for paper making and for rubber, white cements, and refractory products, paints, etc. is present in enormous quantities in the Mackenzie area and has been exposed by taking off overlying bauxite (1949:56).

Gold and diamond mining have made little contribution to Guyana's economy. In the last quarter of the nineteenth century gold was found in large quantities. The gold fever in British Guiana, as elsewhere, created much excitement and public meetings were held in Georgetown to organize the building of a railroad into the interior to exploit the resources. The deposits of gold, silver and diamonds were far smaller than expected and by the mid-1890's returns began to decline.

Today, the gold and diamond industries are quite small, and are dominated by two or three large companies with small mines. The men who work in the mines make occasional trips to the interior and are financed by merchants in the city. This indicates that the small prospectors are always at the mercy of the city merchants who finance their expeditions.

Manganese mining at Matthews Ridge was started in 1960 by the Manganese Mining Company Limited and exports to Trinidad were started later that year. By the end of the year British Guiana produced 122,726 tons of manganese out of which 76,765 tons were exported.

Cattle are raised in three regions: the coastal belt, the "immediate savanna" and the Rupununi in the hinterland. Cattle rearing on the coastal belt should be considered "livestock rearing" which is carried out by small farmers with a few cattle, sheep, pigs, etc. The immediate savanna includes areas such as Mahaica-Abary Creek region, and "third and fourth" depth aback of Blocks I, II and III on the Corentyne coast extending to the Manerabisie area, which is occupied by wealthy farmers. The Rupununi is the largest cattle-rearing region in Guyana. It covers over 6,000 square miles and has the potential to supply the Caribbean with beef. The entire Rupununi region is held on contract by four or five wealthy ranchers.

Coconuts are the third most important agricultural crop in Guyana and the industry is owned solely by Guyanese. There are approximately 36,000 acres under cultivation primarily on the east coast of Demerara and on the Essequibo coast. Production of coconut oil in 1960 totalled over 744,730 gallons. Copra produced that year was estimated at over 5,500 tons. In spite of the high production of coconuts, oil and fats are being imported to meet home consumption, which may indicate that the industry is not properly organized.

The forests of Guyana cover over 70,000 square miles (approximately 80 percent of the total area), yet they contribute only 3 percent of the national income (David 1964:167). In 1959, timber exports totalled over 2.5 million cubic feet valued at approximately $4.5 million. The bulk of the wood exported consisted of greenheart which was sent to Britain, Holland and the United States, where it was used for marine pikes and pit props (R. T. Smith 1962:70). The quality of the timbers is very high and some (especially greenheart) have water- and fire-resistant properties. There are at least 6 billion cubic feet of saleable timber in Guyana. Lumbering is still indirectly controlled by foreign companies which are actively exploiting the resource. If the industry is to survive and continue to make a significant contribution to the economy, timber resources must not be depleted. Proper scientific methods of reforestation and management are necessary for its continuance.

G. SUMMARY

In this chapter I have tried to provide general background information about the conditions which have given rise to the state of dependency. Also an attempt has been made to show the importance of climate and topography to agricultural enterprises and how they influence technological input.

The introduction of agriculture and the demand for resident cheap labour resulted in the large-scale importation of slaves and, later, of indentured workers to produce agricultural goods for European markets. The introduction of agriculture and the need for cheap labour are related to three important considerations. First, from the very inception British Guiana was part of the world capitalist system which resulted in the development of underdevelopment. Secondly, the need for sugar in the European markets gave rise to a mono-crop economy in British Guiana which impeded the development of a diversified agricultural economy. As a result, food had to be imported, indicating the nature of the colony's dependence on the outside world for its food supply. Thirdly, the need for cheap labour caused large-scale importation of indentured workers, which is reflected today in the country's heterogeneous population. The lack of guaranteed sources of cheap labour in the immediate post-emancipation period saw the slow development of the peasantry.

The economic crisis experienced by the European small planters in the second half of the nineteenth century saw the emergence of monopoly large-scale sugar plantations. The beginning of the twentieth century also saw the development of the expatriate bauxite industry. Together, the two foreign industries (sugar and bauxite) dominate the country's economy. It was the dominance of British Guiana's economy by foreign monopolies which became the impetus for expanding the rice industry.

PART TWO

Part two includes Chapters III to V. It begins with the origin and diffusion of rice and its introduction in Guyana. Chapter IV deals with the organizational structure of the industry, while Chapter V deals more specifically with the political and economic importance of the rice industry.

CHAPTER III

RICE: ITS ORIGIN, DIFFUSION AND INTRODUCTION IN GUYANA

A. INTRODUCTION

This chapter traces the origin and diffusion of rice--especially in the New World--and shows the extent to which slave labour was directly involved in rice production. It is important to this study to trace more particularly the extent to which Africans, both in their homeland, and later in the New World, participated in rice production. Attention is given to the fact that although both the Caribbean and the United States employed slave labour, plantation production of rice, as existed in the Southern States, was never known to have existed in the Caribbean.

It has been argued repeatedly that the slaves in the Caribbean were never seriously involved in rice production because they were unfamiliar with this staple in Africa. African slaves, of course, had been brought to labour on the plantations of the Caribbean to produce. Any diversion of their labour was uneconomical. There was little demand for rice in the internal colonial market since food could be imported without diverting local labour for food production. But the collapse of the sugar industry during the latter half of the nineteenth century demanded structural reorganization of the Caribbean economies if they were to be returned to order and prosperity. The impetus for rice production in Guyana in particular came from this need. The expansion of rice production should be seen, therefore, in the perspective of the entire colonial/capitalist structure of the Caribbean, that is, *cheap rice means cheap food, and cheap food means cheap labour for the sugar, bauxite and oil industries in the Caribbean.*

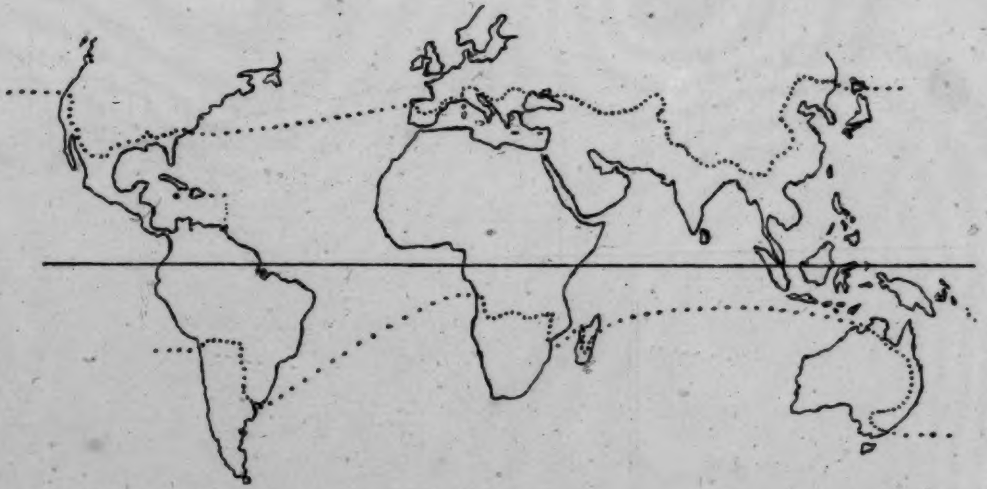
B. ADAPTATION AND DIFFUSION

Rice is probably one of the most unique plants in the world. It has the ability to adapt to both extreme climate and topography (see Map III). Around the equator the plant grows at a very low altitude, as in the case of Guyana where it is grown along the entire coastline which is below sea level (see Map II), and where there is a high fluctuation of seasonal rainfall (see Figure 1). The altitude at which the plant thrives best depends on the latitude. At increasing distances from the equator the crop will flourish at high altitudes, as in the Himalayan Mountains where it grows over 10,000 feet above sea level (Grummer 1970:13-14).

Rice is called a semi-aquatic plant. This is because rice needs water throughout its growth. The amount of water necessary for plant growth in different areas varies because of the underlying geological and hydrological conditions. Also, there is loss of water through evaporation and evapotranspiration. Thus water requirements vary. Grist (1965:34) says that approximately four feet of water is required for plant growth in Indo-China. In Ceylon and Australia approximately six feet is necessary. Guyana has one advantage and one disadvantage in terms of water needs. The coastal clays impede easy penetration,

MAP III

NORTHERN AND SOUTHERN BOUNDARIES OF PADDY CULTIVATION



(Source: Grummer 1970; 14)

thus preventing loss through percolation. On the other hand, the loss through evaporation and evapotranspiration is very high. Thus, water loss in Guyana is not as high as in Australia and not as low as in Indo-China (Grist 1970:41).

As in the case of climate and topography "paddy soil" varies. Varieties of seed must be developed to adapt to local environment. According to Grummer (1970:15) the most suitable soil for rice cultivation is clay soil, or any soil consisting of fine particles such as those found on the deltas of the great rivers. It is because of this that the Mekong and Indus deltas have been known to be the most important paddy-growing areas in the world (for a discussion on soil in Guyana see Chapter II, section B).

When compared with other crops, rice does not need extremely fertile soil. With the advent of modern technology, many countries have embarked upon rice growing, putting into cultivation lands that were not previously under agricultural use. Anderson (1970:53) pointed out that rice is now grown in the United States in areas that were completely ignored by cotton farmers. Pratt (1960:33) stated that most of the land on which rice is grown is not suited for growing other crops and should not be taken out of rice production. Copeland (1924:168) argued that one of the chief reasons for the rapid development of the rice industry is that the land not suitable for other crops was used for rice production. It is important to note, however, that in the case of Guyana, the availability of land or fertile land was not the problem; the major problem there was labour shortage (discussed in Chapter II, section D).

From all the evidence available, both historical and archeological, it seems that the cultivation of rice, *Oryza sativa*, began in Southeast Asia (Grist 1965; Allchin 1968; Copeland 1924). *Oryza glaberrima*, a wild species, has not been studied by most scholars, but there are reasons to believe that it originated independently in Africa (Morgan 1962:237). According to Wood:

> Negroes from the West Coast of Africa were widely familiar with rice planting. Ancient speakers of a proto-Bantu language in the sub-Sahara region are known to have cultivated the crop. An indigenous variety (Oryza glaberrima) was a staple in the western rain-forest regions long before the Portuguese and French navigators introduced Asian and American varieties . . . West Africa has been selling rice to slave traders to provision their ships . . . a white explorer once noted rice to be so plentiful that it brought almost no price (1974:59).

The introduction of rice to the Middle East and later to Europe was a result of the conquest of the East by Alexander the Great (Pratt 1960:2). During the time of the Roman Empire rice was imported rather than cultivated. In the Mediterranean area, rice was not cultivated until it was introduced by the Arabs in the Nile basin (Grist 1965:7). The Malays took domestic rice to Madagascar and the Indians took it to the East African islands. The Moors introduced the crop to Spain and from there to Italy, while the Turks introduced it to Southeastern Europe.

Rice was first introduced to the Western Hemisphere by Christopher Columbus on his second voyage but there is no evidence that it was successful (Efferson 1956:18). Reference to rice in the New World was not made until 1609, where unsuccessful experiments to grow the crop were made in Jamestown. The real introduction of rice to the United States was made in 1685 when Captain John Thurber, returning from Madagascar, called at the port of Charlestown for repairs. There, he gave Dr. Henry Woodward some seed paddy which he had brought from that island. The seeds were grown successfully and became known as the world famous "Carolina Gold Rice" (Heyward 1937:4-5).

Rice-growing in the United States spread from South to North Carolina, and to Georgia, Florida and Mississippi by the early eighteenth century. Rice production was later introduced into Louisiana and Texas. Initially, rice was not an export commodity but was used to feed the slaves and as a cheap substitute for wheat flour (Grey 1933:277). Prior to the use of African slave labour the tiresome work in the rice fields was done by immigrant workers brought from England.

The use of African slave labour in the rice industry was not known in the Caribbean. The reason for this is that there were no *rice plantations* in the Caribbean. Besides, the British market demanded sugar and not rice. This destroys the myth established in the Caribbean that Africans are by nature not good rice growers. The fact is, they simply did not have the opportunity to grow rice.

C. INTRODUCTION OF RICE TO GUYANA

The crucial question we need to ask is: why is it that rice did not become a commercial crop in British Guiana when it was introduced in the early eighteenth century as was the case in the United States? The answer is that the United States had a larger slave population and rice was grown in large quantities to meet the demands for food, thus cutting down on the outflow of plantation capital. Also, there were large tracts of land in the United States that were ignored by the cotton planters because they were considered unsuitable for cotton growing. The third factor was one of simple economics: the large tracts of fertile land in British Guiana were not used for growing rice because the European market demanded sugar. Finally, as Eric Williams (1945:362) stated, British Guiana passed too late into the hands of the British Crown and so lost the possibility of solving its labour problem through the slave trade.

Strom van s'Gravesande, the Dutch Governor of Essequibo, was very optimistic about the growth of rice since its earliest introduction into the colony. In as early as 1750, in a letter to the Directors of the West India Company, he wrote:

> The English colony in Carolina derives most of its revenue and support from the cultivation of rice, whereby several planters have from very small beginnings become large capitalists. The soil in our colonies (Essequibo, and Berbice) produces rice of a much better colour and size than that of Carolina and it has this important advantage over it; whereas in Carolina it takes a year to grow each crop, five months only is required in Essequibo, so that here twelve crops can be obtained against five in Carolina (Harris and DeVilliers 1911: 257).

The Directors of the Company could not understand the logic of Strom van s'Gravesande's argument and did not even reply to him on the question of rice. Three years later, June 1753, the enthusiastic Governor again wrote to the Directors:

> It is a pleasure to see how cheerful, zealous and industrious the newcomers are . . . the arrivals from Carolina will devote themselves to the cultivation of rice. On Mr. la Villette's plantation, I have seen rice standing neglected and no doubt that it would be a great success and yield good profits to the planters (ibid.:293).

Van s'Gravesande was truly disappointed. He was a true colonizer interested in the development of the colonies. Even the newly arrived planters from Carolina were not enthusiastic about the growing of rice, simply because sugar was already a commodity for which there was a ready market--in short, *Sugar was King*.

Despite stereotyped notions to the effect that rice today is a "coolie crop" in Guyana, its history as a staple started with the runaway slaves (Nath 1970:110; Daly 1966:186-187; Rodway 1919:36; Farley 1953:103; Richardson 1970:56-57). As early as 1811, it is reported that runaway slaves who founded settlements in the Mahaicony area, on the east coast of Demerara, were growing rice as a staple. In the same year a joint force of militia was sent from Demerara and Berbice to destroy their crops, in order to force the runaway slaves back to the plantation. The commander of the militia reported:

> The quality of rice and Bush Negroes have just rising out of the ground is very considerable . . . and it will be three months before the rice is fit to gather in, I would recommend at that period another expedition be sent and destroy the same . . . . This they did (destroyed) most effectively fourteen houses filled with rice and several fields in cultivation being by the exertions totally destroyed . . . I take upon me to say from these gentlemen's report that on a moderate calculation the quantity of rice that has been destroyed by them (independent of ground provisions) would have been equal to the support of seven hundred Negroes for twelve months (Farley 1954:103).

Even if the report was exaggerated, we can assume with a degree of certainty that the runaway slaves were growing a large quantity of rice. The sugar planters considered the growing of such crops as dangerous to their maintaining a docile labour force. This belief continued after emancipation. Because of it the planters would flood the provision farms and the vegetable gardens of the ex-slaves, attempting to force them back to work on the plantations.

But conditions did not always remain lucrative for the planters. The "bust" in the European sugar market in the 1820's, coupled with the drought in the colonies, forced the planters to recognize the need for locally grown staples. In 1824, as a result of the slave rebellion of 1823 in Demerara, the Secretary of State for the Colonies pressed for the introduction of "task" work. This resulted in increased provision grounds for the slaves (ibid.:104). On uncultivated areas adjoining the estates the slaves could grow their own crops. According to Farley:

> When a bush or uncultivated piece of land was contiguous to the estate they resided on, a space which they planted in rice, and the space of three months one Negro had reaped one hundred bushels which he sold at two bits each, making 50 guilders in three months by that article alone (ibid.:104).

Many colonial administrators realized that the colony would be economically better off if enough rice could be produced for the local market. As early as 1813 they recommended that importation of rice to the colony be stopped. This recommendation went unheeded primarily because the sugar planters realized that diversification from a mono-economy--sugar--would lead to a diversion of labour which would aggravate the problem of labour shortage on the plantations.

Therefore, *from its very inception, the development of the rice industry has been inextricably bound up with the sugar plantation economy.*

Schomburgh, during his visit to British Guiana in 1840, suggested that:

> The cultivation of rice would prove a very productive branch of husbandry; and as it has formed of late years a principal article of food for the labouring population, it is of great importance that it should be cultivated in sufficient quantities, if not for export, by all means for the internal demand of the colony . . . . The land on the coast is no doubt well adapted

> for the production of rice; but we will not encroach upon the soil at present planted with sugar cane . . . . I am fully persuaded in my mind that two crops of rice may be procured annually . . . . The cultivation of rice would thus cover thousands of acres which are at present in perfect wilderness; and food for the lower class would be provided (106).

However, large-scale development of the industry was impeded. The planters, having control of the political and economic apparatus of the colony, prohibited the development of drainage and irrigation facilities outside the sugar industry, thereby creating a dependency upon the plantation among the villagers.* Despite these attitudes of the planters, Dalton (1855), writing fifteen years after Schomburgh, envisaged the development of the rice industry in British Guiana so long as the sugar-planters would continue to depend on Chinese and East Indian migrant workers. He stated:

> The rice grown in the colony which I have seen was of admirable quality, and now that there is a large coolie population, who prefer rice to any other kind of food, it probably will be raised to greater extent than heretofore; indeed, the coolies have already commenced to raise it in small quantities . . . if this class of labourers, as well as the Chinese, continue to arrive in sufficient numbers, there will be more care and attention bestowed on its culture (1855:185).

There are many who argue that the rice industry was developed by East Indians because they knew more about rice cultivation than any other group of immigrants. Although the "runaways" had cultivated rice a century and a half earlier, Rodway (1919:36) could not understand why it was left to the East Indians to develop the industry. Rodney (1966:36) claimed that in contrast with India, where the East Indians were familiar with its cultivation, rice was not a widespread crop in West Africa. However, knowledge was not the only factor allowing the East Indians to become the first group to enter into a large-scale production of rice. If the rice industry had been a more lucrative venture than sugar, then the planters of British Guiana would have coerced their slaves into growing rice as had been done in the United States.

---

*This attitude of the planter class continued well into the twentieth century. An excellent example of this is the blocking of the "Hutchenson Plan," which would have drained and irrigated hundreds of thousands of acres of land suitable for rice cultivation (for a detailed discussion see Jagan 1964:111-112).

An examination of the sociological and economic factors involved in the development of the industry are quite revealing. First, the slaves did not lack the knowledge to grow rice; what was lacking was the "freedom" for them to grow it. Secondly, the East Indians were "bound" for five years, after which they were free to return to India or to remain in the colony (see Nath 1970:219-223). The latter choice was more agreeable to the planters and they encouraged this by giving small land grants. This immigrant population was to form part of their "reserve" labour force. This posed a serious problem for the planters; if the immigrants succeeded in developing a rice industry it could mean a drain on the plantation labour supply (Smith 1962:50-51). Thirdly, and finally, by 1866, approximately 100,000 East Indian immigrants (Nath 1970:219-223) and about 10,000 Chinese immigrants (Campbell 1971:159-160) had come to the colony. They had a strong liking for rice in their diet, and this preference resulted in large-scale rice importation. In 1840, there was an import duty of one cent per pound on rice (Local Guide to British Guiana, n.d.: introduction cxii). Although there are no data available on the cost of importation of rice, Nath (1970:262) said that rice was retailing for

24 to 28 cents per gallon. It was further reported that in 1884 the colony was importing over 20,000 tons of rice which was costing over one million dollars annually (Ramgopaul 1964:8). The colonial administration realized that the colony had the potential for growing rice and that this huge sum paid for rice importation could be used for the internal development of the colony.

The first recorded attempt of East Indians to grow rice was in 1865. They cultivated sixteen acres at Edinbourgh on the west coast of Demerara (Richardson 1970:57; Nath 1970:110; Ramgopaul 1964:6). So successful was the venture that within the next few years that acreage tripled. Three years later Chinese labourers were growing rice on the Essequibo Coast (Richardson 1970:57), but in 1872 there was a decline in the industry and only a small area remained under cultivation (Nath 1970:110). There are no records to explain this decline. The first great expansion started at the beginning of the twentieth century. Mandle suggests that this expansion of the rice industry came about as a result of:

> . . . *the planter's decision to bring into use in rice production factor inputs belonging to the sugar industry--estate lands and indenture labourers*--played a role almost equal to that played by the release of Crown Lands to ex-indentured workers in the village (1973:41).

But, as argued earlier, this is the result of the production and reproduction of a cheap labour force.

By the beginning of the twentieth century, social and economic conditions in the sugar plantations were improving. More and more East Indians chose to remain in the colony, after completion of their indenture period--some on the plantations, others moving into the villages.* During the same period the government, in its effort to induce the ex-indenture workers to remain, allocated five villages--Huist Dieren in 1880, Helena and Bush Lot in 1897, Whim in 1898** and Maria's Pleasure in 1902--which they offered as land grants in lieu of return passages. However, although the thought of moving to the villages seemed enticing, physical conditions were intolerable as there was neither drainage nor irrigation in the rural districts. Although the government was making Crown Lands available for ex-indentured labourers to settle if they wished, it was still very difficult to raise enough capital to build a little shack. Many did settle. Moving out of the plantation offered them psychological freedom at least, but economic conditions forced them to return to work on the plantation while living in the villages. This became a boon in disguise for the planters. The workers had moved out of the plantations--relieving the planters of their social responsibilities to the workers--and their physical presence ceased to be a menace to the planters during the out-of-crop season. These were the people who formed what the planters had long wanted--*a reserve labour force.*

With the advent of the First World War, commodity prices in the Caribbean, especially of consumer goods, rose sharply. This, coupled with the problems of transportation from the Far East, paved the way for a ready Caribbean market for all of British Guiana's surplus rice. This demand became an incentive for increased production. Nath (1970:111) stated that British Guiana had supplied its neighbouring territories with rice at reasonable prices, throughout this difficult period. The colony could have demanded much higher prices but did not take advantage of the situation. Nath failed to understand that the power structure of Trinidad and British Guiana was identical; they were both dominated by the plantocracy and the British Government. The low prices paid to rice producers represented a concerted attempt to keep the cost of living down in order to permit the foreign companies to continue their exploitation of cheap labour. Ramlakhan (unpublished manuscript:30) noted that the Rice Marketing Board was controlled by the sugar and commercial interests and did all within its power to keep down the price of rice because:

---

*From discussion with many old indentured workers from India, it was found that many who returned to their homeland found it very difficult to reintegrate into their society. They were seen as being "polluted" since they had "mixed with other races," as a result, they re-emigrated to Guyana.

**The author's maternal and paternal grandparents received a land grant at Bush Lot and Whim, respectively, as a result of their decision to remain in the colony after their indentures.

1. Cheap rice in British Guiana meant cheap food for the people and low wages for workers;
2. Cheap rice meant low income for rice farmers who were forced to look for employment in the only other market for their labour, the sugar industry;
3. Cheap rice in the British West Indian Territories had the same advantages for extra-regional firms operating in that area.

The development of the rice industry as a source of sheap food facilitated further exploitation of the labouring classes not only in British Guiana but throughout the West Indies.

Competition for the Caribbean market by Guyanese merchants created problems in the domestic market. So acute were these problems it was feared that if the colony continued to export as much rice as it was doing, supplies would run short in the domestic market (see Figure 3; Ramlakhan, n.d.:3; Nath 1970:111). During the latter half of 1920 and early 1921, the Governor, Sir Wolfred Collet, refused to allow any rice to leave the colony. Reid (1920:10) stated that in view of local conditions, that is, the shortage of rice for local consumption, the Governor placed an export duty of one shilling, five and one-half pence or thirty-five cents for every hundred pounds of rice exported. The embargo was relaxed by the end of 1921 but only about 2,000 tons of rice were allowed to be exported. Low exportation continued until 1926 (see Table IV). From 1927 to 1933 there was an upward trend in production and export, whence it declined until 1942. Paradoxically, although the area under cultivation went up during this period, prices took a downward trend until reaching a ridiculously low price of $2.91 per bag. Rice (shelled grains) in the colony was selling for 16 cents per gallon while paddy (unshelled grains) was selling for $1.00 per bag (ibid.:110) of one hundred and sixty pounds.

When the Second World War broke out, rice from the Far East was cut off and British Guiana's rice was in great demand. In 1941, there was a drastic increase in acreage and this resulted in greater exports--from 881 tons to 22,400 tons. This was due partly to the development of the Mahaicony-Abary Rice Development Company (see Chapter IV) which had bought approximately 4,000 new acres under cultivation. British Guiana's rice again came to the rescue of their West Indian neighbours.

TABLE V

RICE: AREA CULTIVATED AND PRICES PAID TO FARMERS

Year	Area under cultivation (acres)	Exported		Price	
		Quantity (tons)	Value $	Per ton $	Per bag of 180 lbs. $
				about	about
1903	17,500	about 5	288	57.60	4.63
1908	29,746	3,120	283,200	90.78	7.29
1913	33,888	7,710	509,544	66.09	5.31
1914	47,037	9,374	512,736	69.53	5.59
1915	50,737	9,227	647,842	70.95	5.70
1916	57,022	13,124	1,052,693	80.21	7.25
1917	58,090	14,367	1,422,806	99.03	7.96
1918	60,432	8,018	854,693	106.60	8.57
1919	61,400	6,940	951,485	137.04	11.01
1920	55,200	8,005	1,130,736	141.25	11.35
1921	55,900	2,027	283,834	140.03	11.25
1922	49,100	8,790	601,676	68.45	5.50
1923	35,000	3,971	273,687	68.92	5.54
1924	29,400	4,470	312,567	69.93	5.62
1925	29,300	6,918	523,964	75.74	6.09
1926	32,798	2,914	218,146	74.86	6.01
1927	37,340	11,497	723,871	62.96	5.06
1928	44,359	18,083	1,114,147	61.61	4.91
1929	52,989	14,091	876,407	62.20	5.00
1930	49,702	22,480	1,090,385	48.50	3.89
1931	73,647	23,632	1,060,339	44.87	3.60
1932	73,453	28,541	1,187,871	41.20	3.31
1933	72,161	29,120	1,062,470	36.49	2.91
1934	63,227	14,700	583,090	39.67	3.19
1935	70,882	10,565	473,086	44.70	3.59
1936	51,041	20,559	810,318	39.40	3.17
1937	60,079	18,795	783,538	41.70	3.35
1938	49,159	12,888	577,155	44.70	3.59
1939	60,077	12,501	582,547	46.60	3.74
1940	57,859	11,691	708,814	60.63	4.89
1941	82,906	8,881	584,895	65.86	5.29
1942	89,209	22,480	1,828,650	81.35	6.54
1943	85,984	17,180	1,699,963	98.95	7.92
1944	91,729	24,593	2,665,481	108.38	8.70
1945	63,015	25,418	2,765,957	108.82	8.74
1946	64,630	22,620	2,443,679	108.03	8.67
1947	85,623	20,065	2,361,049	117.67	9.46
1948	74,346	17,539	2,059,476	117.54	9.44
1949	87,631	26,988	3,097,774	118.67	9.54
1950	93,637	29,066	3,962,042	136.31	10.53
1951	100,250	30,073	4,381,679	145.70	11.71
1952	133,000	31,197	6,085,116	195.05	15.68
1953	112,500	39,300	9,526,724	242.41	19.47
1954	139,500	36,657	9,277,831	250.37	20.11
1955	153,000	53,285	12,515,745	234.86	18.88
1956	118,469	41,326	9,855,654	238.51	19.17
1957	136,990	38,163	9,166,610	240.19	19.30
1958	155,140	17,676	4,785,346	270.72	21.93
1959	179,200	49,928	11,535,728	251.09	20.17
1960	195,275	63,178	15,401,691	243.81	19.59
1961	226,304	90,236	22,623,542	250.60	20.05
1962	210,000	78,941	19,840,835	251.30	20.10
1963	166,145	83,940	23,400,835	272.10	21.77
1964	278,484	84,800	23,840,000	270.55	21.64
1965	278,000	101,400	24,100,000	237.67	19.01
1966	266,078	100,638	23,424,615	231.11	18.49
1967	201,621	94,377	24,034,692	254.69	20.04
1968	210,985	93,715	26,146,983	279.01	22.33
1969	279,303	73,202	19,669,918	268.70	21.50

Source: Nath 1970.

However, even at this time Guyanese producers were paid only one-half of the world market price (see Table VI)

D. SUMMARY

Rice is today one of the most widely grown crops and is a staple for more than half the world's population. The introduction of rice in the New World fulfilled one primary function found in developing countries, i.e., it became a source of cheap food for the labouring population.

It was realized since the early nineteenth century that rice could be grown in large quantities in Guyana. The fact that African slaves did not grow rice did not mean that they lacked technical know-how. Runaway African slaves grew rice in their hiding places since the early nineteenth century. The sole reason that the slaves, Creole, and early indentured populations did not grow rice was the need for labour by sugar plantations. It is because of the demand for labour on the sugar plantations that the rice industry from the very inception was tied to the plantation economy.

Many colonial administrators realized that rice could be grown in British Guiana and that it could be economically better off if the people would grow rice to supplement their diet rather than import all their foodstuffs. This view was opposed by the plantocracy, as diverting labour from sugar to any other staple would aggravate the problems of labour shortage.

It was the need for labour on the sugar plantations which impeded the development of the rice industry. It was not until the early part

TABLE V I

RICE EXPORT PRICES IN (B.W.I.) DOLLARS PER TON

Country	1946	1947	1948
U.S.A.	215.54	247.77	364.66
Brazil	179.00	211.17	234.70
British Guiana	105.52	115.61	115.96

Source: Jagan 1964, p. 12.

of the twentieth century, when the problems of obtaining cheap food in the Caribbean became a major issue, that the "green light" for expansion in the rice industry was given. The expansion of the rice industry was based not so much on the need to feed the people of the Caribbean as it was to keep the cost of living down. Keeping the cost of living down meant low wages for sugar, bauxite, and oil workers. In other words, the expansion of the rice industry helped to exploit workers further in the other agricultural and industrial sectors of the economy, which were all foreign owned.

CHAPTER IV

ORGANIZATIONAL CONSTRAINTS ON RICE PRODUCTION

A. INTRODUCTION

This chapter begins with a discussion of the organizational structure of the rice industry. Attention will be paid to such organizations as the Rice Marketing Board (RMB), the Rice Producers' Association (RPA), and other bodies that are either regulatory agencies of the Ministry of Agriculture, or farmers' organizations attempting to control or at least influence the production and marketing of their commodity.

Since its organization, the Rice Marketing Board has been under direct government control, first by the colonial government and later by the Jagan and Burnham governments. The Board enjoyed a brief period of "democratization" under Jagan's government (1957-1964) when farmers, through the RPA, had a strong input in production planning and also in marketing policy. The RPA was established in 1946 in order to bridge the gap between farmers and the RMB. After twenty years the RPA was cut off from all financial assistance by the Burnham government, making the organization ineffective in its organizational work. At the same time, the government created the Rice Action Committee.

B. THE RICE MARKETING BOARD

At the beginning of the First World War, British Guiana was exporting approximately 10,000 tons of rice annually to the West Indian market. Production was facilitated by land grants from sugar estates and settlement of Crown lands. There was little if any help in capital investments (including technology) that aided the process of production (Smith 1959:519). Thus, production depended solely on the ability of the farmers to provide their own facilities. Even though farmers had already demonstrated their ingenuity in production, distribution was another matter altogether. Distribution was undertaken by the local entrepreneurs as more surplus began to appear.* Gradually the process of distribution was taken over by the Water Street Merchants, foreign firms, trade agencies and subsidiaries of multinational corporations (even Booker Bros. was involved). They employed agents in the producing areas, primarily local rice millers, in buying up this surplus. The next step was the acquisition of foreign markets. In the absence of any central regulatory agency, the colonial government issued export permits based on contracts obtained from the West Indian islands. Some of the most prominent agencies were Messrs. E. M. Walcott, Pairaudeau and Company, Sandbach and Company, Ramjohn and Sons, Bharatt and Sons, and Booker Bros.

This *ad hoc* system of marketing adversely affected the producers, and perhaps more importantly, as far as the colonial government was concerned, resulted in an increased importation of food. In the first place, heavy demand for Guyanese rice in the West Indian market intensified competition between and among the agents and firms. The consequence was a price war in which Guyanese rice was sold at low prices (see Table IV). At the same time Guyana was forced to import rice to meet its domestic needs (see Figure 3). Contrary to Nath's suggestion that Guyana could have demanded a higher price during the First World War "but did not take advantage of it" (1970:11), the reality was that imperial interests were only concerned with the production of cheap food and not with the further development of the rice industry which would compete with the sugar and bauxite industries. Hence, a blind eye was turned toward the farmers and the colonial government refused to intervene.

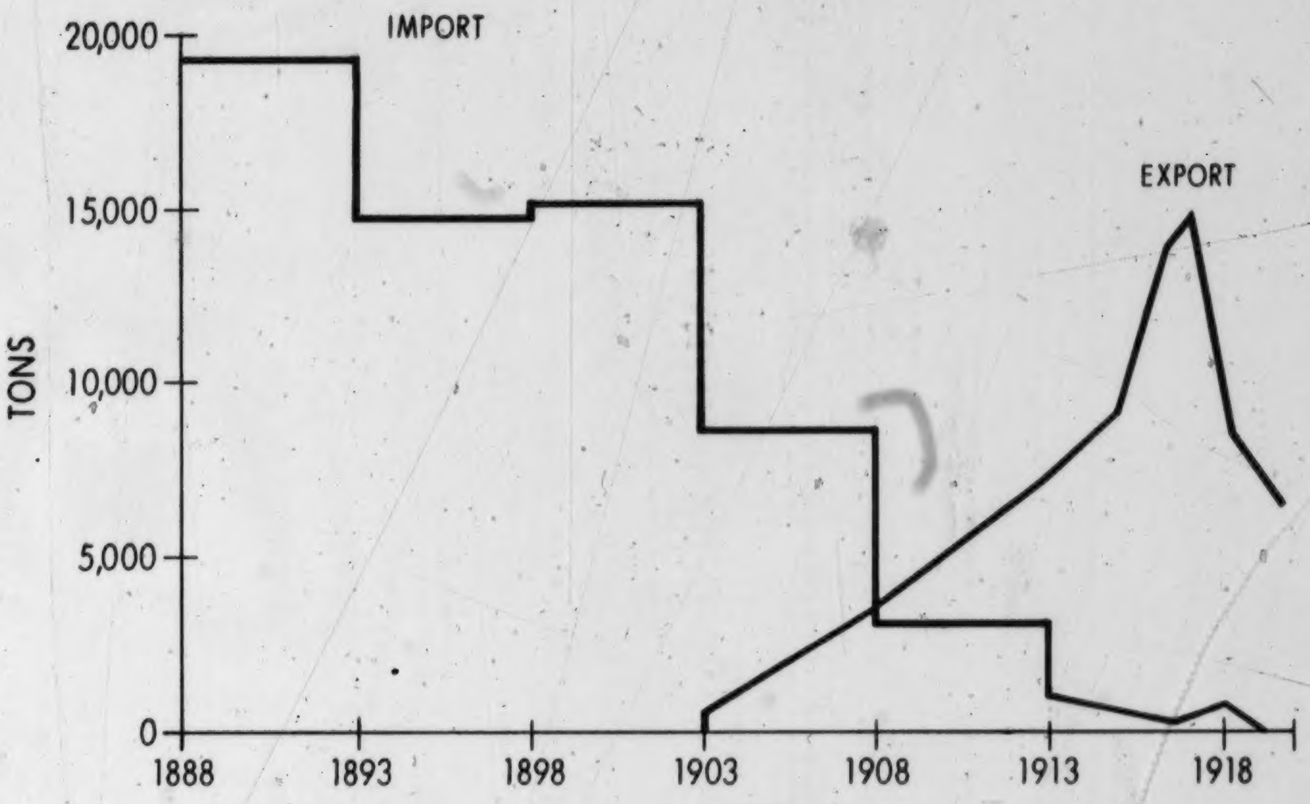
---

*It is important that we recognize that in the earliest period of production, rice was grown primarily as a subsistence crop. The so-called surplus which began to appear during the last decade of the nineteenth century was due primarily to the persistence of those individuals who sought their independence from the sugar plantation.

When farmers diverted larger quantities of rice (to the West Indian market) away from the commercial and industrial market centres of Georgetown, New Amsterdam and Mackenzie, it created a shortage in the internal market. This meant not only that more food had to be imported, but also the cost of labour which depended on such staples would show a corresponding increase. In addition, by 1920, local prices for rice climbed from 80 cents per gallon to one dollar per gallon (Nath 1970:111). The government placed an embargo on exportation of rice, and until mid-1921 no rice was exported from Guyana.

In 1922, the government decided to control, more closely, the marketing and distribution of rice through the establishment of a regulatory body: the Marketing Board.

FIGURE 3 - IMPORT / EXPORT OVERLAPPING



Source.: Math 1970

The aim of the Board was to secure the following functions:

1. Regulate the export of the quantity of rice by stringent controls of export permits.
2. Stabilizing and fixing the price of rice, both internally and for the export market.
3. Standardizing of grades (Ramlakhan, n.d.:3; Ramgopaul 1964:9).

In the early stages, however, other than guaranteeing sufficient supplies at minimum prices for the internal market, the effect of the Board was almost nil. As Nath noted:

> The Rice Marketing Board was at first established only for grading rice and for fixing its export prices. Stnadard grades were fixed for all rice for export, and it was agreed among the exporters not to undersell each other in the West Indian markets. The system, however, was unsatisfactory, becuase there was nothing to prevent an unscrupulous exporter from giving a secret rebate for the rice shipped by him (1970:111).

The *ad hoc* system of marketing was allowed to continue without much interference, as long as internal demands were met. Individual producers depended on the goodwill of agents for a fair price and not on any market mechanisms, since it was the agents of the Board who determined the rhythm of the market.

The period between the two world wars did not change conditions. An article in the Rice Review of 1959 described the following prevailing conditions:

> In the early history of the rice industry, the marketing of rice within the colony was handled by millers, private individuals and commercial concerns. As production increased, surplus exceeded local requirements and an export trade was born. Export continued to increase from year to year, and a large amount of export agents appeared on the scene. Competition among them was keen and they were continually underselling each other in the West Indian market. As a result the producer received a very low price

> for his rice, and his hardships by the uncertainty of the value of his produce from year to year. At the outbreak of the war in 1939, conditions were almost chaotic and the industry bore all the marks of lack of organization, instability and uneconomic prices. *There were about forty exporting concerns and approximately one hundred and seventy spies and small millers competing destructively in the buying and selling of rice . . . cognizant of these difficulties, government intervene to provide some form of protection to rice producers* and the Rice Marketing Board came into being (Rice Review 1959:30).

But it was doubtful that the government intervened to provide protection for producers. The experiences of the 1920's and 1930's were a ready reminder to the colonial government of the manipulations of individuals and agencies and the consequent difficulties encountered because of internal market demands. In addition, supplies to the West Indian markets had to be guaranteed because of the difficulties in obtaining rice from the Far East. With the outbreak of the Second World War in 1939, the government, acting on the basis of the Emergency Powers Act, under the defence regulations, declared the Rice Marketing Board a "statutory body." This established the Board as the single buying and selling agent for all rice produced. In addition to the other functions established in 1922, the main functions of the Board were:

1. To grade and purchase all milled rice from the producers--except that which is allowed for domestic consumption--any other sale is deemed illegal.
2. To purchase and mill paddy.
3. To stabilize the prices through governmental control of prices paid to the producer and that charged to the consumer.
4. To assist farmers in improving the quality of rice for export.

5. To secure markets for the disposal of rice (Ramsahoye 1970:13).

Its powers, however, were of considerably greater scope than is indicated by its functions. These can be briefly summarized as:

1. To grade all rice produced in the country.
2. To establish the minimum price at which paddy may be purchased.
3. To fix the price at which the Board will purchase rice.
4. To set the price at which rice will be sold (wholesale) for consumption in the country.
5. To determine the price for commercial contracts with other countries.
6. To determine what amount of rice can be retained by producers.
7. To prosecute a person or persons infringing the Board's Ordinance, with respect to illegal removal of rice and/or paddy, falsifying accounts, etc.
8. To enter any rice mill in the country to examine books, documents and records to check stocks and to determine whether a miller has submitted a monthly return of his business transaction with the Board.
9. To investigate complaints and settle disputes between farmers and millers.
10. To seize and detain any rice, paddy and bags hoarded in mill by a manufacturer (Ramsahoye 1970:14).

The stipulated activities of the Board were nothing more than another attempt to guarantee cheap food for West Indian labour. First, all members of the Board were appointed by the Governor, without consultation with farmers. Secondly, though prices were guaranteed they were never pegged to the cost of production. Thirdly, control by the Board meant that whatever surplus was produced accrued mainly to the colonial government with no guarantee of a greater return to farmers. At the same time, losses by the Board had to be borne by farmers. The overall intent of the Board was made clear in 1946 when an agreement was signed with the West Indian governments. The agreement was that British Guiana would supply the West Indian islands with rice for five years at prices to be determined on the basis of world minimum price. According to Nath:

> The stipulated price, which was the equivalent of $25 U.S. per metric ton in 1946, rose slowly to $27.57 U.S. in 1950. In the meantime, the export price in Burma, which was $115 U.S. in 1946, went up to $151 U.S. in 1949. In the U.S., the price was increased from $177 in 1946 to $218 in 1950, and in Brazil from $156 U.S. in 1946 to $185 U.S. in 1950. The price obtained in Guyana in 1950 was 36 percent of the price for rice from the U.S. and 42 percent of the price of rice from Brazil (1970:113).

From its inception the Rice Marketing Board has been subjected to political influence; first from the colonial government and later by the PPP and PNC governments. However, it was not until 1959 when the Rice Marketing Board ordinance was amended that the farmers, through the Rice Producers' Association, had some influence on the marketing of rice. In 1946 Sir Frank McDavid, the Colonial Financial Treasurer, became the first Chairman of the Board and was succeeded by Messrs. J. I. D'Aguiar, John Fernandes, W. A. Raatgever and R. B. Gajraj (all of whom had been nominated to their positions). From 1959, Messrs. Bashir Khan, Amjad Ally, Mooneer Khan, S. M. Latchmansingh and D. Oudit served successfully as Chairman. This latter group was elected through the majority Rice Producers' Association representatives. After the PNC government took office in 1965, the RMB (Amendment) Bill was passed reducing representation of the Rice Producers' Association from eleven to three (Ramlakhan, n.d.:15), thus taking the control of the Board away from producers' representatives and placing it within the control of government-nominated members. The argument often put forward by supporters of the government policy is that the Board needs men with business talent and not farmers.

C. THE RICE DEVELOPMENT CORPORATION

In an attempt to meet the demand for cheap rice in the Caribbean the colonial government in British Guiana established the Mahaicony-Abary Rice Scheme in 1942 (Gadd 1951:41). It was hoped that besides producing rice in large quantity, the scheme would help to convince farmers of the efficiency of higher levels of technological input in rice cultivation. In 1952 the scheme was taken over by the Rice Development Company (RDC), a government corporation. The initial impetus for developing the scheme was provided by a loan from the Commonwealth Development Corporation (CDC). The CDC itself made attempts to secure land for rice cultivation, but stern opposition from within the colonial legislature prevented any involvement (Jagan 1964:9). A $5 million loan from the CDC at 5.7 percent interest to the RDC in 1950 resulted in new processing mills being built at Anna Regina and Mahaicony/Abary. But the RDC turned out to be nothing more than a big "galvanized elephant." As Table VII indicates, it was only during the period 1962-1964 that the RDC made a profit. Although there is a lack of tangible evidence for the root causes of losses incurred by the RDC, all indications seem to attribute these losses to maladministration. Nath (1970:116-117) stated that the operating expenses were heavy and the balance sheets showed a deficit year after year.

When the RDC took over the scheme it demolished the old mill at Abary and built another at the cost of $2 million. In 1952, the government had also handed over to the RDC the mill at Anna Regina, on the Essequibo Coast, on which the RDC spent a substantial amount for repair. The high capital input into the processing aspect of the industry seems to indicate why the RDC was running at a loss. But that in itself is not an adequate explanation. Between 1962 and 1964 the Company did show a profit. Both Nath (1970:117) and Ramlakhan (n.d.:5) suggest that the RDC has shown a profit during that period because farmers were given a strong voice in the administration of the Company. In 1965, the Prime Minister, Forbes Burnham, in his first major policy statement on the rice industry, suggested the amalgamation of the Rice Marketing Board and the Rice Development Corporation. The farmers through the Rice Producers' Association strongly opposed the amalgamation. They argued that the loss incurred by the RDC would have to be borne by the RMB which was built by the profits of the farmers. In other words, the farmers had to subsidize the RDC because of its instability to show a profit. Several foreign experts (see Appendix III) suggested that the amalgamation of the RDC and the RMB would not be in the best interests of the rice industry. Urwick Orr and Partners

TABLE VII

INTEREST PAID AND LOSSES SUSTAINED BY RDC

Year	Interest paid	Operational losses	Profit
1954	$ 63,378.43	$ 12,966.07	$----------
1955	112.212.00	219,764.20	----------
1956	159,390.00	518,552.37	----------
1957	210,048.96	224,271.25	----------
1958	255,699.82	382,699.86	----------
1959	279,366.00	224,581.03	----------
1960	299,760.00	497,886.55	----------
1961	311,020.74	57,560.02	----------
1962	320,142.54	---------	211,169.04
1963	----------	---------	114,931.00
1964	----------	---------	145,018.00
1965	----------	741,450.00	----------
1966	----------	1,269,243.00	----------
1967	----------	369,187.00	----------
1968	----------	500,000.00	----------
1969	----------	465,000.00	----------
1970	----------	500,000.00	----------
1971	----------	600,000.00	----------

Source: Rice Development Company.

advised the government that "neither your needs nor your purpose would be served by the mere integration of two relatively inefficient units. All that would likely result would be one big inefficient unit" (cited in Ramgopaul 1968:21). Despite protest from farmers and the advice from the experts, in 1973 the government integrated the RDC and the RMB into the Guyana Rice Board (GRB).

D. RICE PRODUCERS' ASSOCIATION

The Rice Producers' Association (RPA) arose out of the need for a closer liaison between farmers and the RMB. In 1946, the Governor, Sir Gordon Lethem, stated that the RPA "would in a real and effective manner identify the whole community engaged in the rice industry in this colony with the organization which is going to handle the marketing" (Hansard March 26, 1946). The Governor further pointed out that:

> One criticism of the Board during the war years that it functioned far too much as a bureaucratic war time control organization run from the top at Headquarters and far too little identified with the industry and the people who get their livelihood from it [and that the RPA] would in a real and effective manner identify the whole community engaged in the rice industry in the colony (ibid.).

Sir Frank McDavid, Financial Treasurer and Chairman of the Rice Marketing Board, said:

> I sincerely hope that this Association [RPA] when established, would prove to be a live body, fostering in every way possible the interest of rice producers and enthusing in them that spirit of co-operation and self-help which is very necessary if the industry is to progress and prosper (ibid.).

According to Ramlakhan (4) the function of the RPA was to perform the following services:

(a) The protection, promotion and advancement of the rice producers generally;

(b) The proposal of any measures including cooperative schemes of all kinds conducive to the maintenance of extension of production of the industry;

(c) Representing rice producers in the Rice Marketing Board through and by means of members of the Council nominated by the Council and appointed by the Minister to be members of the said Board in manner provided by Section 4 of the Rice Marketing Ordinance;

(d) Making representation to the Governor concerning any matter affecting production in the industry, the operations of the Rice Marketing Board, and the interest of rice producers generally; and

(e) Inquiry into and reporting on any questions relating to the industry which may be referred to it by the Governor or any body lawfully concerned with any phase of the industry, and advising on any matter connected therewith.

But it did not take long to see that the RPA, from its very inception in 1946, was nothing more than a bureaucratic, hierarchical organization intended to exert greater control on the rice industry. To begin with, the legislation which incorporated the RPA as a statutory body provided for an executive committee to be appointed biannually by 13 representatives from the various districts. The organization was open-ended and any rice farmer could become a member. Theoretically, it was an ideal case of "representative democracy." But like representative democracy, it took more than theory for it to be democratic. The RPA, from the beginning was dominated by wealthy farmers (see Table VIII) or, more precisely, capitalist farmers, whose primary interest in farming was to extract profits which in turn were invested in other business. The competition for delegation to the sixteen-man board excluded the majority of poor farmers because they lacked the economic resources, educational and social background (the fact that membership in the RPA was voluntary and services therefore not remunerated in any way, this excluded the majority of farmers because of the need to attend to farms). Even under the PPP government the RPA was dominated by wealthy farmers, though it certainly appears to have given more attention to farmers' problems. In 1965, the PNC government reduced its grant to the RPA by 25 percent, in 1968, by another 25 percent, and by the end of 1969 all financial assistance was withheld, thus making the RPA virtually ineffective. The protestations of farmers at that time, and even today, were that the RPA was being stripped of its power and that its place was taken by another organization, the Rice Action Committee (RAC), with no basis in the rice industry. The major differences between these two organizations are that:

1. Representatives of the RPA are *elected* while representatives of the RAC are *appointed* by the government; and
2. Members who are appointed to serve in the RAC are drawn exclusively from the wealthy farmers (and even non-farmers) with little or no concern for the problems of the poor farmers

TABLE VIII

GUYANA RICE PRODUCERS' ASSOCIATION

Year	President	Full-time occupation	Secretary
1946-49	Caramat Ally McDoom*	Landlord/Businessman	
(1946-53)	-	-	Vishnu Narayan
1950-51	Deoroop Mahraj	Landlord/Businessman	
1952-56	T. P. Jaundoo	Landlord/Businessman	
(1953-55)	-	-	R. B. Jailall (Acting)
1957-61	C. B. Jagan	Dentist/Politician	
(1955-63)	-	-	Thomas Budhoo
1961-62	Bashir Khan	Businessman	
1962-present	D. Ramlakhan	Farmer	
(1963-65)	-	-	L. Ramgopaul

*It is important to note that Caramat Ally McDoom was the first, and only, nominated President of the RPA (he was also a nominated member of the last Colonial Legislative Council). McDoom was paid a rental fee of $3 per acre for a large area of land which was owned by the Government but was leased previously to him at 20 cents per acre--a similar privilege enjoyed by the large sugar plantations.

Source: Ramgopaul 1964:13.

E. LAND TENURE, LOCAL GOVERNMENT AND PEASANT PRODUCERS

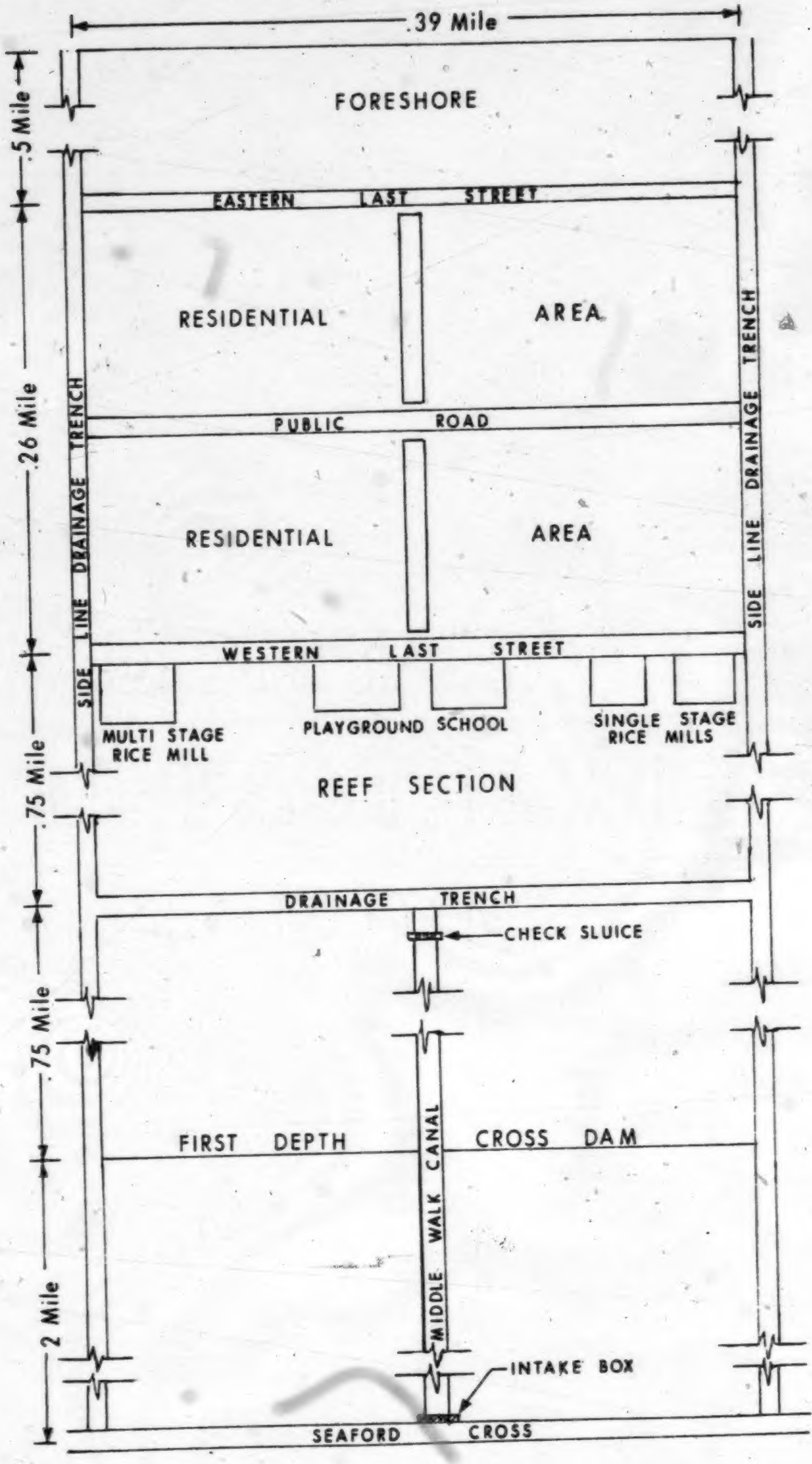
The increasing production of rice away from the immediate area of sugar plantation production created both problems of control and administration, and problems of entitlement to Crown lands. There is very little in the way of documented history of land tenure in Guyana. Even Ramsahoye (1966) fails to deal with the subject in historical terms and begins his discussion in the 1940's. Farley's attempt, though historical, deals only with Negro villages. Richardson's (1973) dissertation deals with land tenure in one page and has nothing historical or analytical. Mandle (1973) in his chapter on "The Emergence of Rice" (32-43), briefly touches on land tenure. Vining (1975) discussed government settlement schemes without serious discussion on other types of land tenure systems. However, with some sketchy documentation and personal memories we are able to piece together an approximate picture of the process. The realities of the two wars (which resulted in problems of importing foodstuffs) made the colonial government somewhat more liberal in the granting of sale of Crown lands to individual farmers, while sugar estates made nominal grants and leases to farmers adjoining the sugar estates. By 1944 there were over 90,000 acres of land under rice cultivation. Most of the land under cultivation was purchased by individual farmers in areas that lent themselves to easy drainage and irrigation. As Farley (1955c) pointed out, this is precisely the reason for the existence of older villages adjacent to sugar estates, when collective help was not sufficient, nor was governmental assistance forthcoming. Initial development of large-scale production in the rice industry occurred independently of either the plantation economy or any significant government assistance (Smith 1959:519).

The initial purchase of Crown lands by individual farmers was facilitated by government assistance to settle the excess labour from the sugar estates, and/or indentured labourers who chose to stay in Guyana. Settlement of other Crown lands occurred through leases granted to groups that made application to the colonial government for land. In most cases, leases were for 99 years, with option to purchase after occupation and successful production. Most of these settlers later purchased the lands they settled on. As a result of this, the majority of small land holders hold their land in freehold and their holdings are referred to as *transported property*. Initially, only a part of the first depth was divided or shared as cultivation area (see Figure 4) and it was not until the late 1930's that the entire first depth was divided. It was this historical occupation of rice land which explains multi-plot cultivation. That is, as the demand for rice rose, land holdings gradually expanded. With each different period of expansion title holders were entitled to add an additional plot. This process continued until 1947 when the second depth was fully occupied.

In addition, the colonial government demonstrated an interest in rice production. In the late 1940's the Mahaicony/Abary Scheme was begun, which brought about 4,000 acres under cultivation. The industry saw its most lucrative and expansive days under the 1957-64 PPP government. Three schemes undertaken by the government brought thousands of acres under cultivation. These included: Black Bush

FIGURE 4

LAYOUT OF RICETOWN


.39 Mile
.5 Mile
.26 Mile
.75 Mile
.75 Mile
2 Mile
FORESHORE
EASTERN LAST STREET
RESIDENTIAL AREA
PUBLIC ROAD
RESIDENTIAL AREA
SIDE LINE DRAINAGE TRENCH
SIDE LINE DRAINAGE TRENCH
WESTERN LAST STREET
MULTI STAGE RICE MILL
PLAYGROUND
SCHOOL
SINGLE STAGE RICE MILLS
REEF SECTION
DRAINAGE TRENCH
CHECK SLUICE
FIRST DEPTH CROSS DAM
MIDDLE WALK CANAL
INTAKE BOX
SEAFORD CROSS

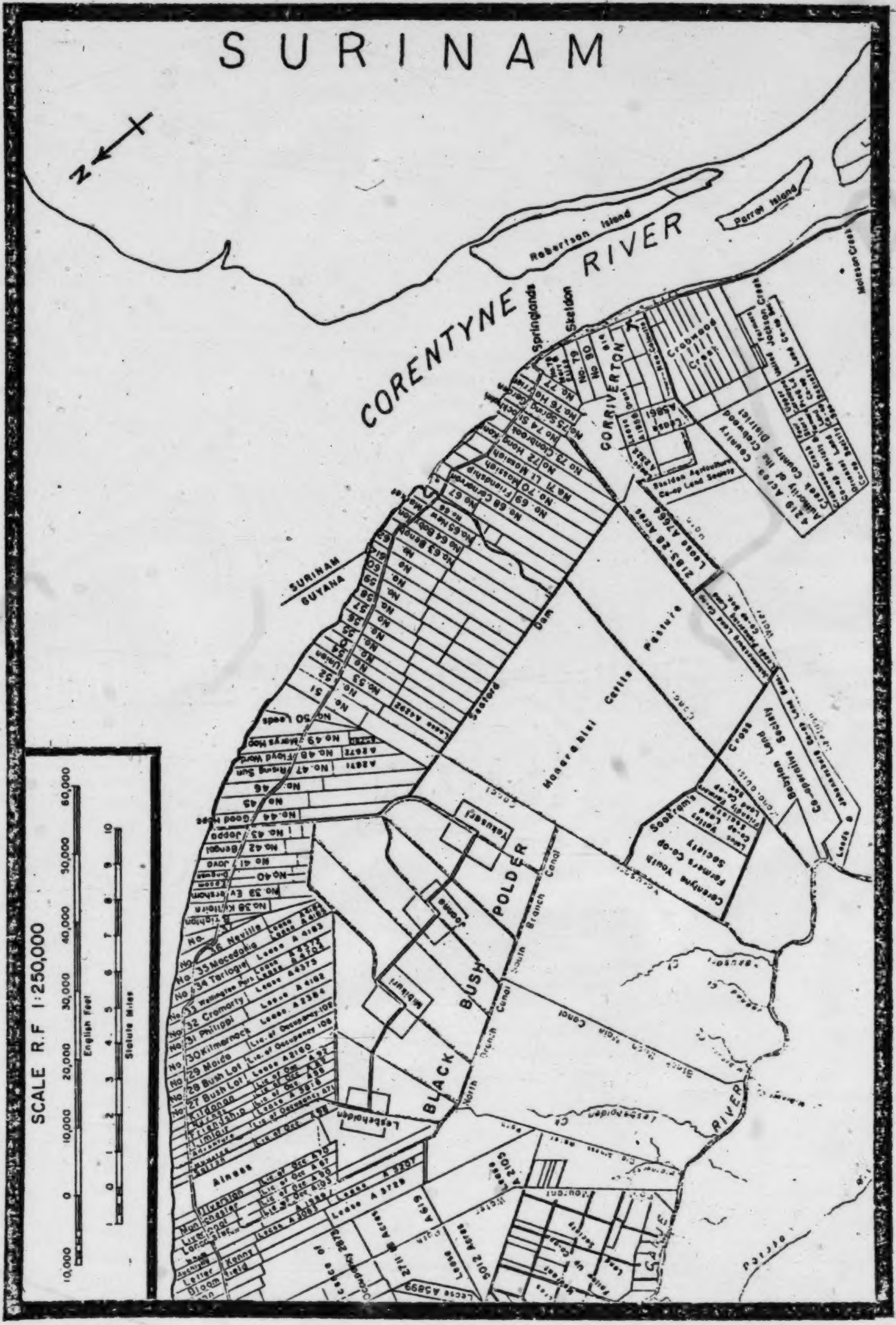
SCALE: 1" = 0.1 Mile

Polder (see Map IV) draining and irrigating 31,000 acres; Boeraserie, 104,000 acres; and the Tapacuma scheme which brought an additional 35,000 acres under cultivation. The organization of these schemes emphasized the individual and family farms already in existence. In most cases, 15-acre plots were allotted to families on the basis of their need and their knowledge of rice production. These government schemes introduced a new pattern of production, i.e., the cultivation of single plots by individual or familiar labour in which the instruments of production were owned or rented.

At the same time, the nature of the colonial/capitalist economy prevented the development of very large units, with a few exceptions of course. In the first place, most of the individuals and families who chose to purchase Crown lands for settlement were wage labourers on sugar plantations. This, of course, prevented their accumulation of capital since wages were low and advancement within the hierarchy of the plantation economy was restricted. The capital available for the purchase of land was small and in some cases amounted to no more than $100. Consequently, the amount of land that could be purchased was small. Secondly, the lack of available tracts of well-drained and irrigated arable land, which is required for efficient rice production, prevented any attempts to secure more than could be easily cultivated. Given the precarious nature of rice production (dependence on regular supply of water during the growing season and drainage during harvest) the absence of well-drained and irrigated farms only invited disaster. The problem was further compounded by the absence of a sufficient level of technology for increased scale of individual production. But even

MAP IV

EASTERN BERBICE AREA


SURINAM
N
Robertson Island
Parrot Island
CORENTYNE RIVER
Springlands
Skeldon
CORRIVERTON
Crabwood Creek
SURINAM
GUYANA
Manarabisi Cattle Pasture
BLACK BUSH POLDER
Canje River
Corentyne Youth Farmers Co-op Society
Babylon Land Co-operative Society
SCALE R.F 1:250,000
English Feet
Statute Miles
10,000
0
10,000
20,000
30,000
40,000
50,000
60,000

if the technology had been available, the low level of capital accumulation--other than sugar and bauxite--would have prevented any acquisition of more land. The mere absence of sufficient quantities of labour would have been enough to block the development of large individual units. The point is not simply that the large tracts of arable land would result in labourers deserting the sugar plantations for the rural areas, which was true enough. More importantly, the exodus from the plantations to the rice villages would result in the loss of planter command over labour. As Eric Williams (1944) puts it, land and capital is useless if labour cannot be commanded.

The consequence of such a process led inevitably to the development of small farming units that required no more than individual and family labour to maintain production. As Table IX indicates, as late as 1954, out of a total of 26,000 farm units, nearly two-thirds were units of between two and eight acres. In addition, there were only 4,000 units with areas of over eight acres per unit.

F. SUMMARY

In this chapter I have attempted to show the structure of the rice industry. First of all, the development of such organizations as the Rice Marketing Board and the Rice Producers' Association found their logic in the attempts by the colonial government to control more closely the development of the rice industry, because of its increasing importance as a staple, not only in Guyana but throughout the Caribbean.

The organization of the Rice Marketing Board (RMB) and the Rice Producers' Association (RPA) made it very easy for the colonial

TABLE IX

SIZE OF RICE ACREAGE UNDER CULTIVATION BY FARM UNITS IN 1954

Size (acres)	Number of farm units	Percentage
Under 2	6,424	23.9
2-3.9	7,546	28.0
4-7.9	8,535	31.6
8-15.9	3.578	13.2
16-31.9	626	2.3
32 and over	274	1.0
Total	26,983	100.0

Source: Extracted from O'Laughlin, The Rice Sector in the Economy of British Guiana, *Social and Economic Studies* 7:121, 1958.

Note: Since the introduction of government schemes there are no census data on the size of acreage per farm unit.

government (and even the Burnham and Jagan governments) to control these two most important regulatory bodies (RMB and RPA) responsible for the production and distribution of rice. After the Burnham government took office in 1965, it failed in its attempt to control the Rice Producers' Association. Thus, by 1973 the government, through the RMB, withdrew all financial support for the Association thereby preventing it from carrying out its organizational work among farmers Further, the government "hand-picked" sympathetic individuals to form the Rice Action Committee (RAC) with the hope of using it to replace the Rice Producers' Association.

CHAPTER V

THE POLITICAL AND ECONOMIC CONSTRAINTS OF RICE PRODUCTION

A. INTRODUCTION

In this chapter I will discuss the political and economic constraints of rice production in Guyana. The industry seems to have enjoyed its "Golden Days" under the Jagan government (1957-64). This success can be attributed to Jagan's insistence on developing an independent economy in Guyana. Development of the rice industry manifested itself in: (1) expansion of the industry by the creation of new schemes such as Black Bush Polder and Tapacuma, and by encouraging farmers to form cooperatives; (2) giving rice producers a majority control in the Rice Marketing Board; (3) increase of the price for rice based on the high price paid in the Cuban market; and (4) easy access for farmers to loans through the commercial banks.

Within the last three decades the rice industry has undergone drastic changes--both socially and technologically. In the final section of this chapter I will show that as a result of these changes poor farmers who in the 1950's could profit from their four or six acres of rice, cannot do so any longer and in some cases may be forced to sell their plots (see Chapter VIII). The main reason for this is that the new techniques of production demand a high level of capital input for the hiring of machinery and for the purchase of additives such as fertilizers, insecticides and weedicides. Poor farmers do not have the wherewithal for increased capital investment in rice production and the commercial banks will not create easy access to capital for poorer farmers. Despite the creation of an Agricultural Bank in 1973, poor farmers are still finding it difficult to obtain loans.

B. THE POLITICS AND ECONOMICS OF RICE

As already mentioned, rice and the rice-growing community did not seriously attract the attention of the politicians until the late 1940's and more so after the introduction of adult suffrage--one man, one vote. Prior to that, politicians paid little attention to persons outside the urban areas.

In 1950, the PPP grew out of the Political Affairs Committee with Dr. Cheddi Jagan (an Indo-Guyanese) as leader of the party. During the 1953 election campaign, Mr. Burnham (an Afro-Guyanese) was made PPP campaign manager for Georgetown in the hope that this would enable the PPP to break the stronghold of middle-class Afro-Guyanese in Georgetown. The PPP was the first truly indigenously organized party in the country and its socialist policies attracted the masses of the urban working class, as well as sugarcane workers and rice growers. In 1953, the first election held under adult suffrage, the party won 18 out of 24 seats.

Even after the suspension of the Constitution (see CMD Paper 7274) and the split in the PPP in 1955 (see Thakur 1973:75-83), the majority of the rice growers continued to support the PPP. Despres (1967:144-147) saw this as support given on the basis of ethnicity and not on the basis of class or class interest. Curiously, after the split in 1955, the majority of Afro-Guyanese in the leadership stayed with the Jagan faction while the majority of the Indo-Guyanese in the leadership moved away with Burnham.* However, at the rank and file level the majority of Afro-Guyanese moved with Burnham, the Indo-Guyanese with Jagan. This was the birth of what later manifested itself as polarization of the ethnic groups on the basis of party affiliation. The victory of the Jaganite faction of the party at the 1957 elections (7 out of 11 seats) was seen as "Aapan Jaht" (voting for one's kind) which further intensified the so-called racial differences.

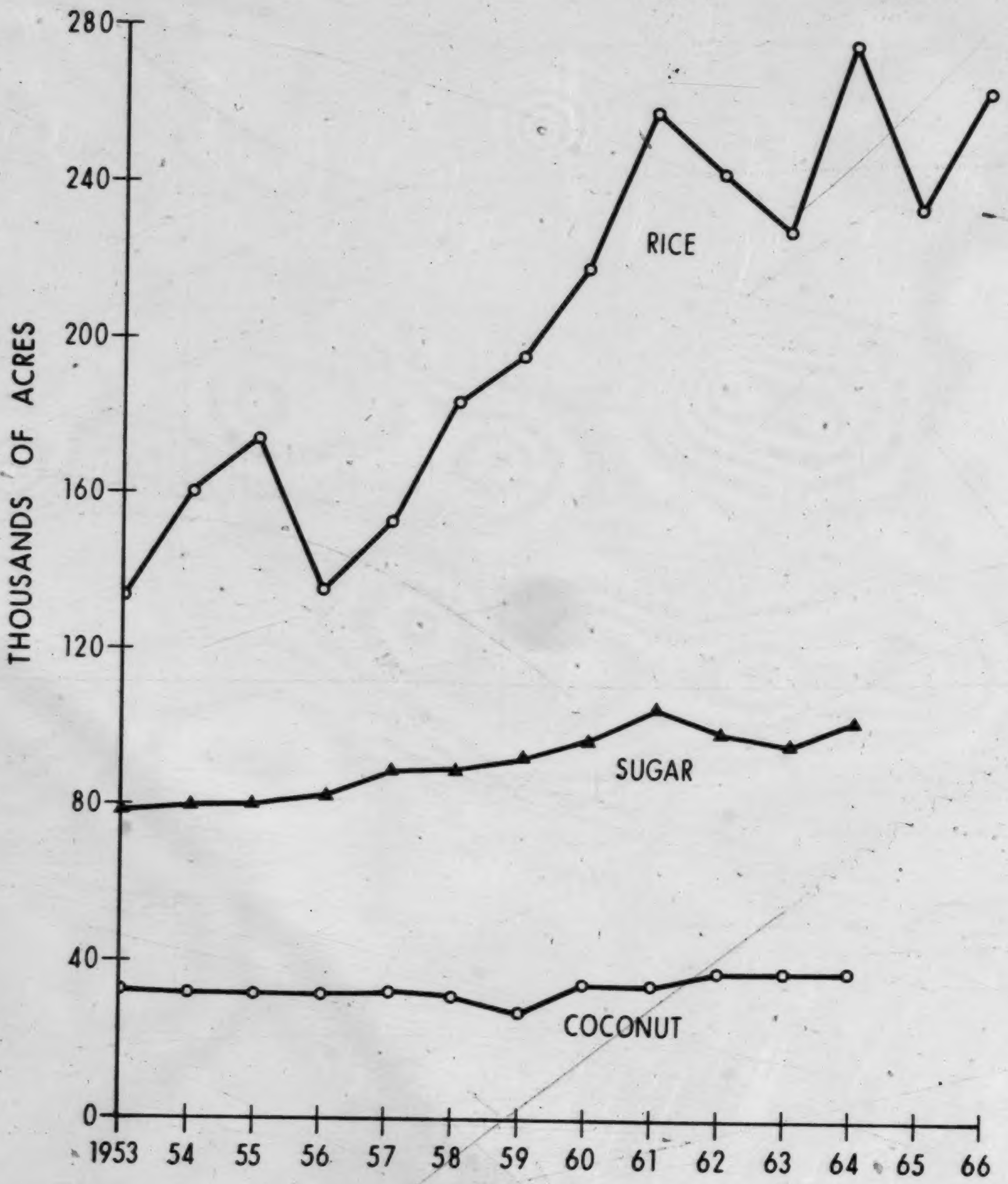
In 1959, the PPP government amended the Rice Marketing Ordinance giving the rice producers majority control in the Rice Marketing Board. Producers' representation increased from eight to eleven on the sixteen-man Board, with powers to elect their own chairman, formerly appointed by the Governor (Ramsahoye 1970:16; Ramlakhan, n.d.:5). Under the old ordinance the Board constituted sixteen members--eight producers' representatives and eight government nominees. Jagan (1966:238) saw the changes in the Board as a way of putting the Board in the hands of the rice producers.

The sympathy of the PPP government towards the rice growers led to tremendous expansion of land used for rice (see Figure 5) when compared with land use in other sectors in agriculture. In 1953, 112,500 acres were under rice cultivation; by 1964 it increased to 278,484 acres. This was facilitated by the availability of fertile land and the

---

*During the 133 days days in office after the 1953 elections, the government had six Cabinet Ministers, three Indo- and three Afro-Guyanese. After the split Ashton Chase and Sydney King (now Esu Kwyana) stayed with Jagan while Jainarine Singh and J. P. Latchmansingh, the two Indo-Guyanese, joined Burnham's faction of the party.

FIGURE 5 - COMPARISON OF ACREAGES OCCUPIED BY RICE, SUGAR AND COCONUT FROM 1953 - 1966



introduction of machinery (see Chapter VIII). The expansion continued through new rice schemes and partly under the initiative undertaken by individuals to form cooperatives where thousands of acres came under cultivation. However, unlike the government schemes such as Black Bush Polder, most of the cooperatives are still suffering from a lack of drainage and irrigation. For example, during preliminary field research in July 1973, I visited Babylon, one of the largest co-ops in the Upper Corentyne area and saw a lush growth of rice which was expected to be reaped by mid-October, with an expected yield of about twenty bags an acre. On my return to the field in Spring of 1974, I was told that because of excessive rainfall and lack of drainage facilities, not a single bag of paddy was reaped.

The policy of the PPP to invest heavily in rice has been severely criticized. Despres (1966:145-147) accused the government of investing heavily in the rice industry because of "racial politics." He argued that the government's heavy investment in agriculture (primarily in rice) was to solidify its support from the rice-growing community--primarily Indo-Guyanese--in the form of political patronage. Newman (1960:262-269) went even further, criticizing the government for its heavy investment in rice while ignoring the industrial sector of the economy.* The PPP was accused of being a "Rice Government" as most of the land that was brought under agriculture was given to the rice farmers. According to Newman, "by accepting the short-run palliatives for rice farming, British Guiana is piling up for itself, in the by no means distant future, a host of grave social and political problems" (cited in Despres 1967:246).

---

*Newman's criticism of the PPP government for lack of diversification of the economy came out of Kenneth Berrill's Report on the British Guiana's Development Program 1960-64. For further discussion, see K. Berrill 1961:1-5; Thorne 1961:6-7; Camper 1961:18-24; Boulding 1961:25-34; and Newman 1961:35-41.

According to Jagan (in an interview in 1974), the policy of the PPP to invest heavily in rice should be seen both in political and ideological terms. First, after 1960 the PPP government insisted that all industries established in the country must be owned or controlled by the government. Under these circumstances, most Western capitalists refused to invest in the country. Secondly, the Cuban government agreed to lend the government of British Guiana $32 million (B.W.I.) to assist in setting up a hydroelectric plant and another $5 million to establish a wood and pulp mill. The loan, at two percent interest, was to be repaid by supplying rice, railway sleepers and forest products. In 1961, the Hungarian government offered to set up a glass factory in British Guiana for the government, at two percent interest. The East German government had agreed to set up a rice-bran* oil factory, but this was terminated by the Colonial Development Corporation. Jagan (1964:14) stated that the Russians were prepared to sell tractors, draglines, and bulldozers with five years to pay at two and one-half percent interest. The price for fertilizers which the Russians were offering the Rice Marketing Board was less than half of what the merchants were charging. Jagan's plan was based on the need to escape the dependency upon income from sugar and bauxite. Rice was the only available alternative.

---

*Rice-bran is a thin layer that lies between the paddy shell and the grain of the rice.

There were several other offers to develop the industrial sector, all of which seemed like practical ventures since the base of these raw materials existed in the country itself. None of these offers, however, were accepted, simply because the British government, under United States' influence, refused to sanction the loans. The arguments put forward in support of Britain's veto was that all the countries that offered loans or assistance to British Guiana were within the Communist Bloc and were looking to British Guiana as a future satellite. For these reasons, Newman's criticisms of the PPP government are misleading. The socialist principles of the PPP prevented Britain and other Western countries from investing in the industrial sector of the country, not the rice policy of the PPP.

On the other hand, the Government's argument was that since rice was the only exportable commodity owned by Guyanese and did not need much capital investment, it had priority within the government's plans. Furthermore, the majority of the rural population was already part of the "rice culture" and did not require special training. Expanding and intensifying rice production was also a means of creating more jobs in the non-producing sector of the industry (although it is difficult to say exactly what is the ratio of indirect employment created by the rice industry). Caffay and Efferson (1967:2) in their report rightly stated that:

> For every one person engaged in direct production in the field, employment is provided for several others in services related to the industry, such as transportation, shipping, banking, insurance and marketing of supplies.

Dr. P. Reid in his capacity as Minister of Agriculture, at Anna Regina, on June 7, 1968, stated:

> Guiana's rice industry provides a livelihood for more prople, directly and indirectly, than any other industry in the country. In one way or another, almost one quarter of a million of our people earn employment through the rice industry and forty-five thousand families work on the rice fields (cited in Ramsahoye 1970).

Thus, besides its potential to increase foreign exchange earnings, the rice industry was a large employer of labour.

In 1961, after the PPP's election victory, the rice industry was given a further boost when the government secured the Cuban market for the country's rice. The Cuban market traditionally belonged to the United States but this was ended by the United States embargo. The Cubans showed a keen interest in Guiana's rice and promised to buy all surplus rice produced in the country, and they would pay between fifteen and twenty percent more than Guiana's traditional West Indian market. This verbal guarantee, plus the increased price, led to what became known as the "Golden Days" of the rice industry.

In 1963, the Colonial Office, as a result of pressure from the United States, agreed to make constitutional changes in Guyana, instituting a system of Proportional Representation (PR) which (after the 1964 elections) would allow the opposition forces to form the government (Schlesinger 1965:779). The government, as well as the opposition, knew that the PPP could not muster fifty percent of the votes to form the government under PR. In an attempt to demonstrate its strength the PPP organized mass rallies throughout the country.

As expected, the PPP did not acquire fifty percent of the votes to form the government. Thus, the parties of Burnham, and Peter d'Aguiar, a wealthy Guyanese of Portuguese background and leader of the United Force (UF), formed a coalition government. Dr. Jagan became the leader of the opposition.

On May 24, 1964, less than five months after the PNC/UF coalition took office, the government amended the Rice Marketing Ordinance, reducing the Board's membership from 16 to 11 and reducing the producers' representatives from 11 to 3 (Ramsahoye 1970:17; Ramlakhan, n.d.:15; Nath 1970:115), while 8 members were nominated by the Minister of Agriculture. In an interview, Mr. Ramlakhan, President of the RPA, noted that "the Board's assets and properties which were built up over the years by the rice producers, were arbitrarily converted to *State Property*."

When the coalition government took office in 1965, it claimed that the rice industry was in a chaotic situation and millions of dollar were owed to the commercial banks (Urwick Orr and Partners 1966:13-14). Richardson stated:

> Besides the political implications involved, Burnham inherited a bankrupt rice industry. A considerable deficit has been accumulated by the Rice Marketing Board. The Board while controlled by Jagan's government, had actually been paying higher prices to local producers for milled rice than it was receiving abroad (1967:61).

It is true that the Board showed a loss of $4.3 million during the 1964-65 fiscal year. But this loss could be attributed to the 1963 general strike which lasted 80 days (see Thakur 1973:95-108) during which gasoline and other fuels were not readily available; as a result the number of acres cultivated declined from 210,000 in 1962 to 166,145 in 1963 (see Table V). On the other hand, if the Jagan government was paying higher prices to local producers for milled rice than it was receiving from the overseas market, how can we explain profits recorded during 1960-63 (see Table X and Figure 6).

TABLE X

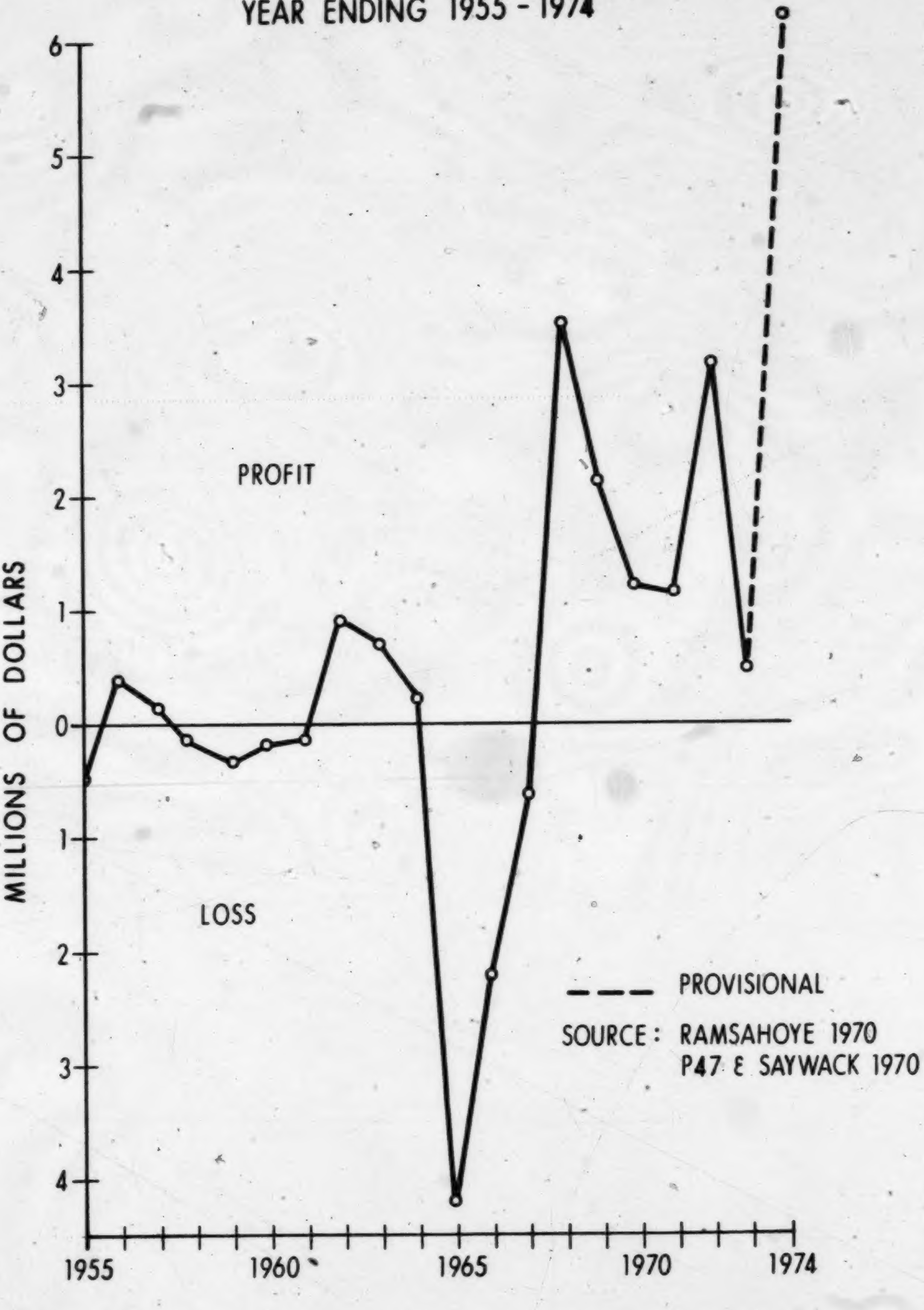
EXCESS OF INCOME OVER EXPENDITURE, 1964-74

Year	Income over expenditure	% of sales
1964-65	4,308,877*	11.0
1965-66	2,875,640*	2.1
1966-67	557,576	n.a.
1967-68	3,549,747	10.4
1968-69	2,167,054	5.2
1969-70	1,162,572	4.8
1970-71	1,123,582	11.6
1971-72	3,162,489	n.a.
1972-73	518,744	n.a.
1973-74 (Provisional)	6,251,190	n.a.

*Losses.

Source: Saywack 1965.

FIGURE 6 - EXCESS OF INCOME OVER EXPENDITURE
YEAR ENDING 1955 - 1974



SOURCE: RAMSAHOYE 1970
P47 & SAYWACK 1970

In 1965, the Burnham government employed the Connell Rice and Sugar Company from the United States to sell Guyana's surplus rice, a function which was previously carried out by the Rice Board. Table IV also shows a reduction in the export price for rice--from $270.55 per ton in 1964 to $237.67 per ton in 1965--when Connell Company took over responsibility for selling all of the country's surplus rice.

The 6.2 million dollars which appears in 1973/74 under the heading "Excess of Income Over Expenditure" (see Table IX) is not due to better or more efficient administration on the part of the Rice Board, or to increased sales, but was due to the increase in prices from the foreign market which was retained by the Board instead of being passed on to the farmers and thereby appears as "profit" on the balance sheets.

Another point often emphasized by officials is the amount of subsidy which has gone into the rice industry. The Minister of Agriculture, Mr. Gavin Kennard,* stated that the Board subsidizes the purchase of fertilizers up to $6.00 for each bag of rice produced. The Board also subsidizes the price of rice for domestic consumption by an average of one million dollars per month. In other words, the Board's subsidy for domestic consumption of rice is $12 million annually (Graphic, October 23, 1975:1). An interesting point is that the Minister did not state where the Board gets its money for subsidies, or how it could afford such high subsidies for both fertilizer and the domestic purchase of rice. The fact is that the Board which is the only buying and selling agent for rice produced in Guyana, has a virtual monopoly on rice sales and therefore on prices. For example, in 1974 the Board received $84 per bag for white rice from the West Indian market (Ramlakhan, n.d.:46) and paid only $45 per bag to farmers (see Table X I). During the same year the Board received $76 per bag for parboiled rice (ibid.:46) and paid only $40.50 per bag to producers (see Table XII). From the above figures, two conclusions could be drawn: first, the $12 million used by the Board for subsidizing domestic consumption should be seen as contributions made by the rice-growing community toward the development of the country, and toward maintaining low food costs; secondly, it is because this contribution made by the rice industry is *indirect*, that its economic importance is often neglected when compared with sugar and bauxite.

---

*In 1973, Mr. Gavin Kennard replaced Dr. P. Reid as the Minister of Agriculture.

Another problem of the rice industry is that higher levels of technological input and their accompanying cost (see Table XIII)plus the use of additives such as fertilizers, insecticides and weedicides, have not increased yield per acre. On the contrary, between 1945 and 1950 when fertilizer was not used, an acre yielded an average of 16 bags (see Table XIV). After the intensive use of machinery and fertilizer, we find a drastic reduction in yield per acre to 8.27 bags per acre in 1973/74.

The increased cost of machinery as shown on Table XII should not be interpreted as inflationary. If we compare the increase in cost of tractors to farmers from 1960 to 1975 we find that a Massey Ferguson 135 HP tractor increased by $10,000 or 285 percent. On the other hand, looking at Table XI, we find that the price of Super parboiled rice increased from 1960 to 1974 by $16.96 or 80.6 percent. To take the

TABLE X I

PRICES PAID BY THE BOARD TO FARMERS FOR ONE BAG (180 POUNDS) OF PARBOILED RICE FROM 1962-1974

Year	Extra Super	Super	Extra No. 1	No. 1	Extra No. 2	No. 2	No. 3	Extra Super Broken	Broken	Unclass-ified	Unclass-ified No. 1	Unclass-ified No. 2
1962-1964	22.50	21.04	19.90	18.95	16.90	15.80	13.65	9.00	7.20	7.00	-----	----
1966	-----	20.00	-----	17.00	-----	13.80	10.00	-----	7.20	4.30	-----	----
1967	21.00	20.00	18.25	17.00	-----	13.80	10.00	-----	7.20	4.30	-----	----
1968/69	-----	20.00	18.25	17.00	-----	13.80	10.00	-----	7.20	4.30	-----	----
1970	21.00	20.00	18.25	17.00	15.00	13.80	10.00	10.00	8.20	4.30	-----	----
1971	22.50	21.00	17.75	17.00	15.00	13.80	10.00	10.00	8.20	4.30	-----	----
1972 (June)	22.50	21.00	19.25	18.00	16.00	14.50	10.00	12.00	9.00	4.30	-----	----
1972 (Oct)	23.50	22.00	20.25	19.00	17.00	16.00	-----	13.00	10.00	----	11.00	5.30
1973(Feb 15)	25.50	24.00	22.25	21.00	19.00	18.00	-----	15.00	12.00	----	13.00	7.00
1973(Sept 1)	27.50	26.00	24.25	23.00	21.00	20.00	-----	15.00	12.00	----	15.00	9.30
1974 (March)	29.50	28.00	26.25	25.00	23.00	22.00	-----	17.00	14.00	----	17.00	11.30
1974 (Sept)	40.50	38.00	36.25	35.00	32.00	30.00	25.00	22.00	19.00	----	-----	----

Source: Ramlakhan 1974:13.

TABLE XII

PRICES PAID BY THE BOARD TO FARMERS FOR ONE BAG (180 POUNDS) WHITE RICE (APPROVED VARIETIES STARBONNET AND BLUE BELLE) FROM 1967-1974

	Extra White "A"	White "A"	White "B"	White "C"	White "A" Broken	White "B" Broken	Super Broken	Broken	White Broken
1967	21.00	20.00	18.00	-----	-----	-----	-----	-----	-----
1968	21.00	20.00	18.00	-----	-----	-----	-----	7.20	-----
1969	21.00	20.00	18.00	-----	-----	-----	10.00	8.20	-----
1970	22.00	21.00	19.00	-----	-----	-----	10.00	8.20	-----
1971	23.50	22.00	19.50	17.00	-----	-----	10.00	8.20	-----
1972 (June)	23.50	22.00	19.50	17.00	-----	-----	10.00	8.20	9.00
1972 (Oct)	24.00	22.50	20.00	17.50	-----	-----	10.00	8.20	9.50
1973 (Feb)	27.00	25.50	23.00	20.50	15.00	12.00	-----	-----	-----
1973 (Sept)	30.00	28.50	26.00	23.00	15.00	12.00	-----	-----	-----
1974 (March)	32.00	30.50	28.00	25.50	17.00	14.00	-----	-----	-----
1974 (Sept)	45.00	41.50	38.00	33.50	22.00	19.00	-----	-----	-----

Source: Ramlakhan 1974:14.

TABLE XIII

COST OF MACHINERY ($G), 1960-1975

Equipment	1960	1967	1972	1975
Massey Ferguson 135 HP Tractor	3,500	4,900	7,100	13,500
Massey Ferguson 165 HP Tractor	4,000	6,400	10,000	17,500
Massey Ferguson 400 HP Combine	---	30,000	45,000	68,000

Source: Sutherland 1976:I9.

TABLE XI V

AVERAGE YIELD PER ACRE 1945-1974 IN BAGS OF 140 POUNDS PADDY

Year	Average yield per acre (bags)
1945/46	16.10
1950/51	16.90
1954/55	14.70
1959/60	15.30
1960/61	12.70
1961/62	14.10
1962/63	13.60
1963/64	13.40
1964/65	13.00
1965/66	12.70
1966/67	12.30
1967/68	10.70
1968/69	9.60
1969/70	10.70
1970/71	11.76
1971/72	12.20
1972/73	11.65
1973/74	8.27

Source: Sutherland 1976:13.

analysis further, we find that in 1960 it required about 167 bags of milled rice, at $21.04 per bag to purchase a 135 HP tractor. In 1975, it required 355 bags of milled rice to purchase a similar tractor. The declining value of commodities such as rice produced in underdeveloped countries, relative to goods produced in industrially developed countries, illustrates one means whereby people from the underdeveloped countries are being exploited. In other words, *the development of underdevelopment continues*.

There are two reasons which can be offered to explain the reduced yield of rice per acre. First, with the introduction of higher levels of technology there began a shift of emphasis: from "cow and plough" labour-intensive small enterprises to larger enterprises, i.e., cultivating more acreage. We find that under the "cow and plough" system land were properly prepared, e.g., chipping, raking, henga (the biological advantages of puddling are discussed later) and seedlings transplanted--evenly spaced--thus allowing each plant to develop properly with little competition for food, sunlight, and air. Also, the introduction of new seed varieties such as Starbonnet have not produced large yields unless properly fertilized. New seed and fertilizer created an additional economic burden on poorer farmers and it is interesting to note that labour expenditure decreased significantly (compare Table XXII Chapter VII, and Table XXIII Chapter VIII)

According to the *Graphic* (October 1975:1), exports of rice production for 1974 were 73,269 tons (more than 10,000 tons less than in 1963--see Table IV). The Minister of Agriculture pointed out that the export value for 1975 was over $73.1 million, which supports the earlier argument that increase in foreign exchange gained from sales of rice did not come about because of better administration or increased production. Rather, it resulted because of higher prices in the overseas market. The Minister pointed out that the amount of foreign exchange increased by over 300 percent when compared from 1963 to 1974 (ibid.:1). However, despite the increase in prices received by the Board it was only after September 1974 that farmers received a substantial increase for the price of their rice (from $29.50 to $40.50 per bag for brown rice and $23.00 to $45.00 for white rice; see Tables XI and XII).

The PNC government ended the Cuban Trade Agreement when it took office in 1965. In its place the government employed the services of Connell Rice and Sugar Company Inc., of New Jersey, to sell Guyana's rice outside the traditional West Indian market at a retainer's fee of $250,000 plus one percent commission on all rice sold (Ramlakhan, n.d.: 15). No reason was given for the government's action. It appears that pressure was brought to bear by the United States government which could not be dismissed (Ramsahoye 1970:17). Also, it was partly because of the government's employment of Connell Rice and Sugar Company to sell Guyana's rice that farmers were being paid approximately $2 less per bag than before (see Table V) and that the Rice Board suffered losses totalling over $4 million (see Table X and Figure 6). During the same period the government removed the tax-free petrol for agricultural purposes (Ramlakhan, n.d.:26). Thus the farmers faced a drop in the price of rice and an increase in the cost of production.

In 1965, the Cuban government which was still interested in continuing trade relations with Guyana sent a trade delegation to

Guyana.* It is ironic that today the government boasts of its success in marketing the country's rice (*Graphic*, Sept. 10, 1975:7; Chronicle, Sept. 12, 1975:2) because rice now is again being sold to Cuba. How much more beneficial it might have been for both the government and farmers, if the government after taking office in 1965 had continued selling rice to Cuba on a government-to-government basis and avoided the "middle men" like Connell and Company, who were paid at the expense of the farmers.

The losses incurred by the Board can only be attributed to the policies of the PNC government. The PNC government, in an attempt to "clean up the mess" of the previous government, invited a host of foreign experts (see Appendix II) to assist in solving the problems of the rice industry. From 1965 to 1968, nine foreign companies and/or consultants carried out surveys at all levels of the rice industry. Urwick Orr and Partners reported (1966:13-14) that the Board, while controlled by the Jagan government, had actually been paying higher prices to the local producers for milled rice than it was receiving from the overseas market. This, they pointed out, was done in order to consolidate the PPP's support among the Indo-Guyanese population. In a further analysis of the Board's precarious financial position, they stated that:

> The likely results for 1966 will be losses of over 3 million dollars and 800,000 dollars respectively for the RMB and the RDC. It is difficult to envisage a more serious financial position than that currently applying within the industry . . . . It is equally clear that there can be little hope of additional funds being obtained from commercial sources, unless they can be convinced that the industry will be run on a different basis (ibid.:2).

---

*I was in the country when the Cuban delegation visited Guyana. The Minister of Trade, Mr. W. O. R. Kendall, left his office hours before

Maynard and Company (1967:5) observed that overstaffing (both during PPP and PNC control of the Board) resulted in inactivity of up to 50 percent of the Board's employees. Pilfering had been prevalent in the Board's warehouses throughout the country and it was reported that "a high proportion of workers only lounged about and in the past have threatened intimidation and violence to supervisors" (ibid.:70). In response the RPA noted that these shortcomings in the Board were the results of political featherbedding by persons of no practical experience with the rice industry (Richardson 1970:65).

Since it took office in 1965, the PNC government has issued four major policy statements concerning the rice industry. These statements indicate the degree of political control the government has over the industry. The political control has resulted in changes in the industry, e.g., introduction of new varieties of seed paddy (Blue Belle and Starbonnet), which resulted in new practices in production. Below is a summary of policy statements, the first by the Prime Minister in 1965, and the rest by the Deputy Prime Minister.

First Government Policy Statement

1. Adequate storage facilities for drying and storing of the entire paddy crop.
2. The paddy crop to be purchased as reaped* with the intention that after the cost of milling, selling and

---

the delegation arrived and stated it was a question of "misunderstanding." During the same week the Minister entertained a delegation from Venezuela, with whom Guyana had done little or no trade at all.

*In the dissertation proposal I predicted that because of the all other expenses are deducted, including debt charges and reserve fund, the surplus would be returned to the farmers.

3. Increased research.
4. Amalgamation of the RMB and RDC in one corporation.

Second Government Policy Statement

Dr. Reid, in August 1967, in the National Assembly, stated: "It is proposed that the two major rice Corporations will be unified and storage bins will not be erected . . . . They (the millers) have to hand over to the Rice Marketing Board all the paddy that is milled."

Third Policy Statement

In November 1967, Dr. Reid, in introducing the Blue Belle paddy at Mahaicony, stated: "The experts have advised and we believe this advice to be correct, that the RMB and the RDC should come under joint forces in order that efficiency be obtained. When central purchasing of paddy is introduced the farmer will be freer than he is today to dispose of his paddy and will not be forced by law to sell the paddy to the Board."*

---

economics and traditional method of rice processing, the Government's plan to purchase paddy from farmers would fail. This, however, is not the case, as the economic conditions and the system of double-cropping are forcing farmers to sell their paddy.

*Poor farmers do not need to be *forced by law* to sell their paddy. The existing economic conditions are forcing them to sell it. Many small farmers during the 1974 spring crop were forced to sell their paddy while still in the fields--unthreshed.

Fourth Policy Statement

Dr. Reid, on June 7, 1968 at Anna Regina, reiterated the government's policy on rice, and stated that "with the aid of international expert advice, the government has decided to concentrate on the re-organization and modernization of the rice industry in the four essential areas":

1. Adaptation in the latest cultivation methods and farm management techniques;
2. Introduction of long grain, high yielding, pure line seeds, over the traditional D110 and BG79. With the new variety such as Blue Belle,* it would be possible, with careful handling, to reap up to three crops a year which would further result in higher foreign exchange for the country;
3. Modernization of milling, storage and processing methods and facilities, which would include artificial and bulk storage;
4. Milling efficiency to meet the needs of our export markets.

---

*Despite government's efforts to push Blue Belle, it seems that it was prematurely introduced in Guyana as not enough research has been carried out to see if it could adapt to the local conditions. A few years after its introduction, it was found that it could not resist some of the local pests. A few years later the Starbonnet was introduced. Like the Blue Belle, this variety is now boosted by the government on the advice of foreign experts. Dr. Jagan has pointed out that we have to be careful not to plunge headlong into accepting the experts' advice since we do not know about their connections (the experts claim that Starbonnet is fertilizer-responsive) with W. R. Grace and Co. (owner of Federation Chemicals Ltd.) of Trinidad, who are the sole producers of fertilizer in the West Indies.

Presently the government is again in the process of modernizing the rice industry and is determined to do so. As early as 1968, the Prime Minister stated:

> Farmers must cease being peasants, scratching the soil surface and struggling to maintain their families. The farmer must become a businessman, understand that farming is a business that requires training, good husbandry and management (Rice Review 10:3, 1968, cover page).

Every farmer would gladly heed the Prime Minister's advice, but the majority of farmers live at subsistence level and cannot afford the initial capital expenses for input such as fertilizers, insecticides, etc. (see Chapter VIII). The government has established an Agricultural Bank, but many poor peasants complain that it takes too long for loans to be processed and only certain individuals qualify for such loans (for further discussion of this point, see next section).

It is difficult to understand the government's expectations of the farmers to change their pattern of rice production at the same time as they try to eke out a living from the land when most of the profit is being appropriated by the Rice Board. As early as 1966, in his first policy statement, Prime Minister Forbes Burnham promised that profits would be returned to the farmers. On March 14, 1975, the President of the Rice Producers' Association in a letter to Dr. Reid pointed out that although the Board had received an increase in selling price to the West Indian market for packaged rice from $64 to $94 per bag, brown rice from $51.50 to $84 per bag, and white rice from $41.50 to $76 per bag (Ramlakhan, n.d.:46), it continued to pay farmers approximately 50 percent of what it received from the West Indian market.

It is certainly true that whereas during the PPP's term of office many of its activists were Rice Producers' Association representatives, the same is true today of the PNC, where many of its activists are also members of the Rice Action Committee. The crucial difference, however, is that representatives from the RPA to the Board were *elected* by rice producers, today the members of the RAC are *nominated* by the government.

On March 14, 1974, the RPA issued a seven-point demand (see Appendix III) for an increase of rice prices. Ramlakhan (ibid.:46) claimed that from 1966 to 1974 the farmers had suffered losses totalling thousands of dollars. The government, the demand claimed, should help defray some of the losses suffered in order to restore confidence in the industry. The government refused to accede to the RPA demand and stated that an increase in prices is not the only solution to the farmers' problems. According to Dr. Reid, speaking in his capacity as Minister of Agriculture:

> The fact is that over the years increased prices for rice has not resulted in increased yields per acre; and increased yields per acre is and remains the yardstick which we must use to measure development in the rice industry . . . the well established principle that only increased production at this stage can really give the farmer higher incomes if the industry is not to rely on subsidies as happened in the past (Facts on Rice, n.d.:4).

The statement by Dr. Reid seems nothing more than a rationalization on the part of the government through the Rice Board, to pay approximately 50 percent of what it received from the West Indian market to farmers while retaining the rest, which is used in part to subsidize domestic consumption. The Minister's argument parallels those of the International Bank for Reconstruction and Development and others discussed in Chapter I. The problems of production are seen as having their genesis within the country, thereby neglecting to take into account the external forces which not only dictate the changes in the technical means of production but more importantly help to change the social relations of production within the country.

Today, the economic problems in the rice industry must be analyzed at two levels: (1) the outflow of capital from the country for the purchase of machinery, fertilizer and other additives, and (2) the displacement of labour within the industry, and its national impact. R. T. Smith in his study of rice production on the West Coast of Demerara in 1956 showed that the total cost of producing one acre of rice was $144.38 (see Table X V). As I will demonstrate later (see Chapter VII), most of what Smith referred to as "cost of production" was the result of *exchange and/or family labour*. There were few cash transactions and most of what Smith referred to as "returns" (see Table X V) could actually be seen as the farmer's annual income.

The cost of producing one acre of rice in Ricetown in 1974 is $223.00. The crucial point is that only six days labour is involved (see Table XVI) If we say an individual earns $7.00 per day we find that only $42.00 is paid out in wages. The rest ($181.00) goes to tractor, combine, fertilizer, and mill/truck owner--most of which goes out of the country for machinery, spare parts, fuel and so on.

It is incorrect to analyze the problems of the rice industry strictly on the basis of "increased yields per acre" (as does the Minister of Agriculture). What we need to understand is the historical development (as discussed in Chapter III) and the forces which gave rise to the changes in the ownership of the means of production between the second and third period. The technical innovation at the beginning of the third period led to the displacement of labour, thus contributing

TABLE X V

ESTIMATED COST FOR ONE ACRE OF RICE PRODUCED IN 1956 (THAT IS, IF THE FARMER HAD TO PAY)

Operation	No. of days labour	(Est. cost/acre) BWI dollars*
Ploughing	5	25.00
Harrowing	2	10.00
Cleaning and making banks	1	5.00
Seeding	-	6.00
Maintenance of seed beds	½	2.00
Transplanting	7	15.00
Maintenance and cultivation	3	6.00
Reaping	8	14.00
Preparing a spot for threshing	1	2.50
Threshing	3	13.50
Operations and cost at factory	4½	29.78
Rental	-	10.00
Bags	-	5.50
Total	35	144.38
Returns		186.90
Surplus		42.52

*In 1956 all countries in the Eastern Caribbean including Guyana used BWI currency. Today, one Guyanese dollar is worth approximately $0.96 BWI.

Source: Extracted from figures given by R. T. Smith in "Aspects of Rice Production in British Guiana," *Social and Economic Studies*, Vol. 6.

TABLE XVI

ESTIMATED COST OF PRODUCING ONE ACRE OF RICE IN 1974

Operations	No. of days labour	Cost (including labour (G$)
Land preparation	--	41.00
Sowing or broadcasting	½	13.00
Cultivation	3	52.00
Reaping (17 bags of paddy)	½	65.00
Transportation of paddy	½	16.00
Drying	½	3.50
Milling (9 bags of rice + 1 bag broken grains)	½	33.50
Transportation of rice to the Board	½	10.50
Total	6	223.00
Returns		356.00
Surplus		133.00

Source: Data collected 1974.

to the perennial problems of unemployment and underemployment suffered by underdeveloped countries.

C. CREDITORS AND SMALL FARMERS

It cannot be denied that there is a need for increase in rice output per acre. But to stress the need for output per acre without taking into account the technical, sociological and economic factors associated with the entire industry is misleading. The farmer knows that increased production may mean more benefit for himself. Thus we need to ask, why does the small farmer fail to accept changes in the means of production? Is it because he is lazy?* Is he trying to subvert the industry? Or, is it that new practices mean higher capital input which he cannot afford? The rice farmer cannot afford to subvert the rice industry--it is his only means of survival. He cannot strike. He cannot afford to bargain with the Board for the price of his rice--not even the grade of his rice. He cannot sell his rice to any agent, neither can he retail it in the open market. Thus, the farmer is completely at the mercy of the Board.

Many lower ranking officials of the Rice Board constantly complain about the lackadaisical attitude or disorganized behaviour of the (small) farmers. They do not understand why these farmers cannot buy their supplies, e.g., bags, fertilizers, paddy seeds, insecticides, etc., at the beginning of the crop year. Many officials of the Rice

---

*For an excellent discussion on the misunderstanding of "laziness" among native people the reader is referred to Alatas (1977), "The Myth of the Lazy Natives."

Board stereotype rice growers and see them as being wealthy individuals. The problem is one of economics, i.e., high initial capital input into rice production which many of the poorer farmers cannot afford. The initial capital investment during the sowing season is more than $100 (see Table XIII). How can a poor farmer who grows but four acres of rice raise $400 with little or no collateral? He and his creditor will have to wait for four months for returns. The credit system in the country has not reached the poorer farmers, that is, those who need it most.* The National Agricultural Bank was created to cater specifically to farmers. The Corentyne district is considered the main rice-producing area in the country where the majority of farmers own from three to eight acres. Yet the Agricultural Bank (during the time of field work, May 1974 to February 1975) had not established a branch in the area. One farmer (in an interview) stated that he had to travel up to Whim (28 miles) to make an application for a loan to purchase a tractor. Three months later he received an acknowledgement of his application; six months later another letter stating that his application was in the *process* of consideration. By mid-1975 the farmer had not received the loan. He finally sold some of his cattle to purchase the tractor. This particular individual is not even a small farmer. His personal assets totalled over $50,000 and he cultivated over twenty acres of rice. The problems of credit for the small rice farmers are best explained by Mr. Harry Madramootoo, Director of Research, Guyana Rice Corporation:

---

*During the 1950's and early 1960's the commercial banks at Springlands, especially the Royal Bank of Canada, through its manager, have been very lenient with poorer farmers Today the bank lends money only to farmers who have and use the deed (or transport as it is popularly known) of their freehold property as collateral. In some cases mill owners sign as guarantors. These practices are not encouraged and millers are reluctant to sign for small farmers who even want to pledge their transport. The Royal Bank branch at Springlands has given way to the Bank of Guyana. But neither the Bank of Guyana nor Barclays Bank offers loans to small farmers under easy conditions. One of the bank's managers interviewed is also a victim of stereotyping. He said, "How can these people who have been planting rice for years and years--even before we were born--keep running for a loan from crop to crop? Can you imagine what would happen if we started giving loans to every Tom, Dick and Harry?"

> . . . There is a great deal of reluctance and unwillingness on the part of the private sector as well as some Government Agencies to extend credit to the penniless but potentially important small rice farmer. Both sectors contended that the volume of business is too low, collateral usually non-existent, overhead too high, and capital and personal resources too limited for them to be of practical assistance to the average farmer.
>
> . . . Furthermore, even in those instances where some credit is available, difficulties inherent in the system(s) oft-times render the assistance practically useless. High interest rates, repayment arrangements which fail to take sufficient cognizance of the fact that repayment of a loan depends primarily on the increase in productivity it enables, loan installments which do not pay proper regard to size and timeliness of operation, etc, often render the assistance almost nugatory. Indeed, to demand payment before the crop can be processed, or to release funds for only a portion of the seed paddy required, or to make pesticides available after insects have damaged the crop is to do the farmer a disservice, really.
>
> . . . Because of limited or unsympathetic production credit opportunities, many small farmers confine their borrowings to consumption purposes and thus seldom have funds for improvement or modernization of ther farming enterprise. As a result, there develops what may be considered a circular causation--more and more of the benefits of modernization and improvement go to the established producers and, to the extent that this takes place, small farmers are not integrated into the economy of the country (1971a:10-11).

With difficulty, the government is attempting to overcome many of these problems (which are so often clouded by political and racial overtones). During the 1975 crop year, Mr. Neville Sutherland, the Manager of the Rice Board, stated that the Rice Board had given approximately $4 million in loans to farmers, but there was no indication of what percentage of the loans was finding its way to those who really need it--the small farmers.

According to government sources, the Rice Board offers many benefits to the rice producers:

(a) Guyana earned more than $86 million foreign exchange from its rice export, while subsidizing local consumption* to the tune of $12 million.

(b) Subsidized price of fertilizers, insecticides, weedicides and fungicides to approximately $6 million, which is equivalent to approximately seventy percent of the cost of these inputs.

(c) Subsidizing the cost of reaping, that is, Guyana Rice Marketing Board combines charge two dollars to reap one bag of paddy as opposed to privately owned combines which charge three dollars.

(d) The Guyana Rice Board subsidizes the cost of rice bags at a cost of $12 million. A farmer pays seventy cents for a bag that costs one dollar and seventy cents.

(e) Loans to farmers totalling more than $4 million for the purchase of spare parts and inputs.

(f) More than $1 million on maurina control measures.

(g) The Guyana Rice Board research department did extensive spraying using aircraft for the control of blast.

---

*The Board over the past years has been subsidizing rice for local consumption to the point where a bag of Brown "B" rice is sold in the local market for $21 per bag. In 1975 the Board sold 48,000 tons for human consumption, 20,000 tons for livestock feed, and another 25,000 tons for seeds (Guyana Graphic, Dec. 23, 1975, p. 1).

(h) The Board gave (and will continue to give) farmers $10 bonus per acre for growing spring crops--more than $600,000 was paid out last year.

(i) Free education service to the farmers.

(j) More than 250 Guyana Rice Board tractors, combines and pumps were in use (Forward: Guyana's Weekly Rural Newspapers Dec. 29, 1975, p. 1; Guyana Graphic Dec. 23, 1975, p. 15).

It can be seen that the Rice Board takes a very paternalistic view as to how the profits should be shared. The *Board* does not produce rice and as such cannot produce profits. The profits from the rice industry are created by those who produce rice and the decision as to how the profits should be shared, or used, should be made by them, that is, they should be involved in the decision-making processes of the industry. This is probably what Madramootoo meant when he said that "small farmers are not integrated into the economy of the country."

Also, if we examine each ofthe points set out above, we find that they all, either partly or wholly, discriminate against poor farmers. For example, (c) states that the reaping of paddy with Guyana Rice Board combines is being subsidized by 33.3 percent. But according to an earlier pamphlet (see Appendix III), Guyana Rice Board combines *will not* reap fields with less than five acres located in one plot: How many farmers own more than five acres (see Table VIII)? When wealthier farmers are paying two dollars per bag for their paddy to be reaped by the Board's combines, smaller farmers are forced to pay three dollars to the private combine owners. Again, if we examine (h) where the Board gives an incentive of $10 per acre for spring crop cultivation, a small farmer with two or three acres will receive about twenty or thirty dollars while the farmers with fifty to one hundred acres will collect as much as five hundred to a thousand dollars.

The Guyana Rice Board and the Rice Producers' Association hold opposing views on the question of subsidy. The Rice Producers' Association President, Mr. D. Ramlakhan (in an interview), suggested that the Board withdraw from the present subsidy and increase the price of rice to $75 per bag. On the other hand, the Board's officials argue that if the subsidy were to be removed and a direct increase be given to the farmers, the other sectors such as millers, landlords and combine operators would increase their fees and rents. The increase given to the farmers would be appropriated by those who provide services. The Board's argument is that the subsidy is not seen by the *service producers* and thus cannot be easily expropriated.

The process of mechanization has not been a unified one. Traditional methods of cultivation, especially in reaping, still exist in the Essequibo districts. During the 1975 autumn crop "farmers went to their plots with grass knives and oxen to give their crop the traditional start" (Forward, Guyana's Rural Weekly Development Newspaper, Oct. 13, 1975, p. 1). On the other hand, mechanical equipment has become the standard feature on at least ninety-five percent of the rice lands (Madramootoo 1971:1). The trend is not only towards more machinery but for heavier and larger machines. The standard Massey Ferguson 29 HP, 35 HP and even 65 HP or any of the similar types are no longer available. Today the emphasis is on the 165 HP model. None of the tractor dealers offer any explanation as to why there has been this shift towards more powerful machines. Many farmers expressed strong desire to see the return of the 35 HP model. A Ferguson 35 HP (or any similar model) in the later 1950's sold for approximately $4,000. Today, the 165 HP sells for approximately $20,000, which means that fewer farmers could afford to purchase them. During the later 1950's a combine sold for $28,000. It now sells for approximately $60,000.

In conclusion, we may ask if the increase in the price of rice paid to the farmers has kept abreast with the increase in prices for machinery and other costs. The government hopes to counter the increase in prices of machinery by encouraging farmers to form cooperatives, and secondly by encouraging small farmers to enter into block planting (see Sutherland 1975).

D. SUMMARY

In this chapter I have discussed the economics and politics of rice production. In the 1950's and early 1960's the industry was given a boost by the efforts of Jagan's government in order to escape the dependence on the two major foreign-owned industries--bauxite and sugar. Since the Burnham government took office in 1965, the rice industry has suffered immeasurably: the loss of the Cuban market, the removal of control of the Rice Marketing Board from the farmer-controlled Rice Producers' Association to government-nominated members. These problems were further aggravated in the late 1960's by the inflated prices of machinery, fuels and other costs. The resulting attempts to reorganize the industry have so far met with little success and very few prospects for success in the near future.

The point is also emphasized that changes in the techniques of production--higher levels of technological input, cost of fuels, fertilizers and other costs--have drastically increased the cost of production without corresponding increases in either yield per acre or financial returns per acre planted. Finally, the increased prices which the government, through the Board, received from the West Indian market were (are) not being passed on to the farmers but were (are) retained by the Board and referred to as "profits" (see Table IX).

PART THREE

Part Three is my case study. It includes Chapters VI to IX. This section deals with the Upper Corentyne area where I collected data. The general problems of development as discussed in Part I and zeroed in on Guyana in Part II are further narrowed down to the village level in this section.

The political and economic problems of the rice industry as discussed in Section II (Chapter V) reflect on the social and economic life of the people in Ricetown. Technological changes in rice production activate other social and economic changes in the village. These changes are reflected in the seven case studies (see appendix to Chapter VI).

CHAPTER VI

RICETOWN: FAMILY, CLASS AND POLITICS

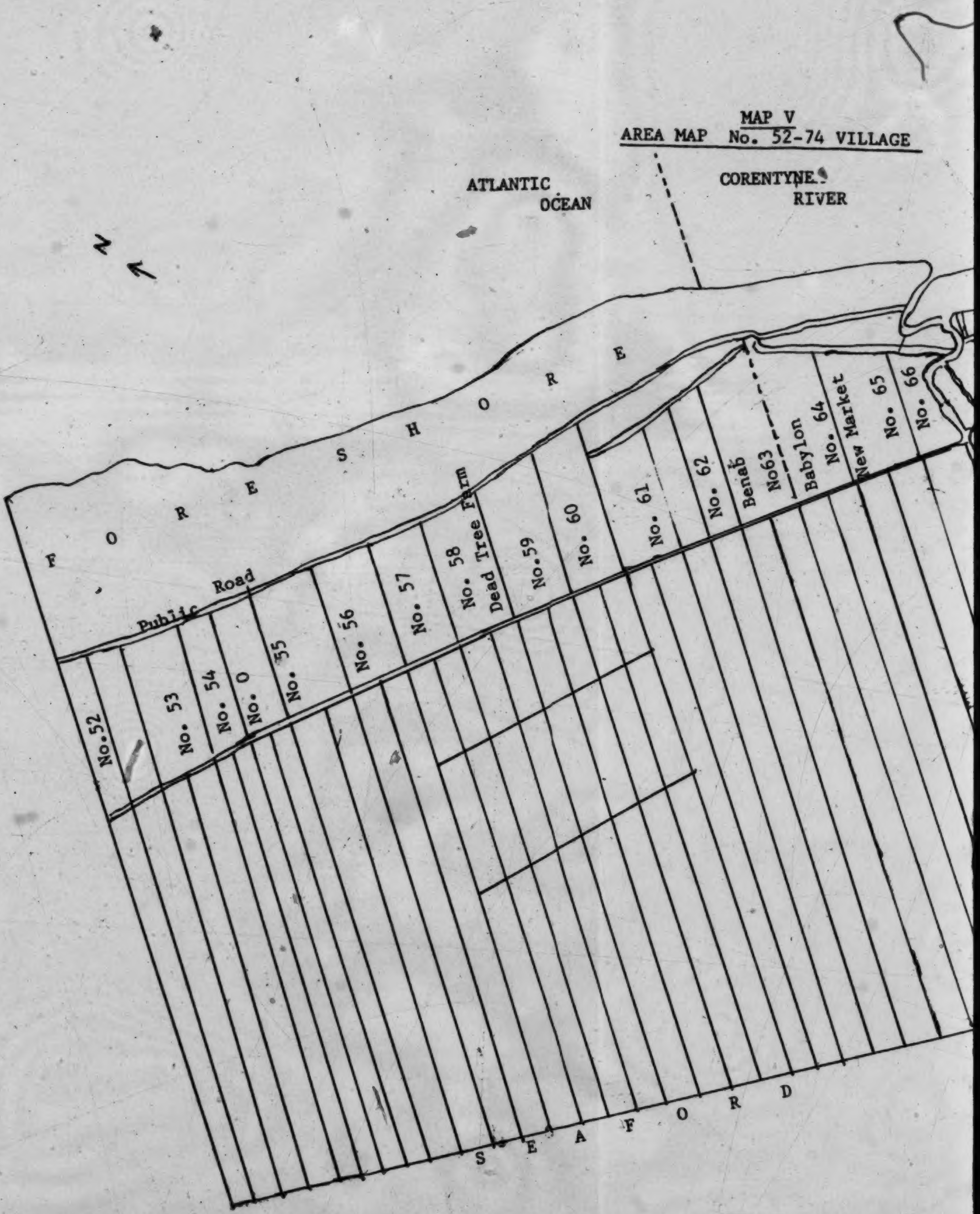
A. INTRODUCTION

In this chapter, I will discuss the social and economic structure of the Upper Corentyne area (see Map V), with emphasis on Ricetown, the village where data were collected. The geographical and topographical setting is that of a typical coastal village as described in Chapter II.

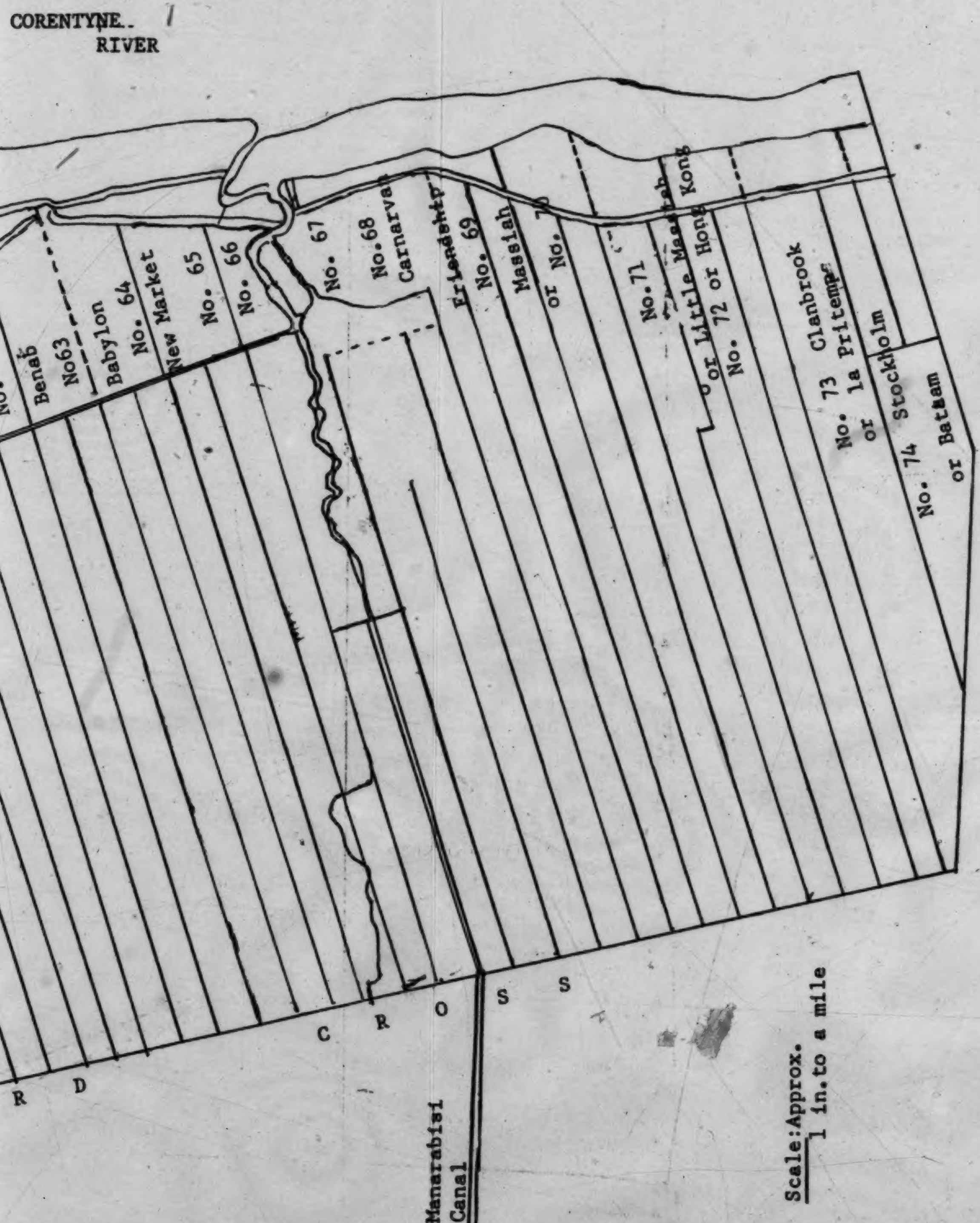
Ricetown was first occupied in the 1850's by Portuguese ex-indentured workers and later by Africans and East Indians respectively. The Portuguese soon joined their more well-to-do kinsmen in the urban areas, while the descendants of Africans and East Indians remained in the village.

Historical changes in the technical as well as the social relations of rice production in Ricetown (see Chapters VII and VIII) led inevitably to changes in the structure within the domestic group. The incipient fragmentation of the extended family, i.e., the relative independence of its constituent nuclear family units, is evidenced by the using of separate cooking hearths or "chula" (fireside). Most married sons in well-to-do families move out of their parents' homes and build their own, while married children in poorer families are forced, because of economic need, to remain with their parents for a much longer period. I shall argue that it is because of certain economic constraints that the apparently "extended" family (e.g., father,

MAP V
AREA MAP No. 52-74 VILLAGE


ATLANTIC OCEAN
CORENTYNE RIVER
N
FORESHORE
Public Road
No.52
No. 53
No. 54
No. 0
No. 55
No. 56
No. 57
No. 58
Dead Tree Farm
No.59
No. 60
No. 61
No. 62
Benab
No63
Babylon
No. 64
New Market
No. 65
No. 66
SEAFORD

MAP V
No. 52-74 VILLAGE


CORENTYNE RIVER
No.
Benab
No63
Babylon
No. 64
New Market
No. 65
No. 66
No. 67
No.68
Carnarvan
Friendship
No. 69
Massiah
or No. 70
No.71
Massiah
or Little Hong Kong
No. 72
Clanbrook
No. 73
or 1a Pritemps
Stockholm
No. 74
or Bataam
R D
C R O S S
Manarabisi Canal
Scale: Approx.
1 in. to a mile

mother, their two or three married sons and their wives and children) live together.

B. THE AREA

Villages in rural Guyana are stretched along the coast, with each village as a link in a chain extending from one end of the coastline to the other. There are no marked separations between one village and the next, with the exception of dams and trenches referred to as *side lines*, which are the primary means of drainage.

There are several reasons for selecting the Upper Corentyne area for study. First, and most important, the majority of the residents are small-proprietor farmers who are directly involved in rice production. Second, though the area was not the first to experience mechanization, once mechanization began its progress was rapid. It is felt that since the focus of this study is on the impact of technology on rice production it is reasonable to select the area that has been most influenced by such a process and it is the area with which I am most familiar (see Appendix I).

The Corentyne district is named after the Corentyne River which separates Guyana from Surinam. When the British took possession of Berbice in 1803, the Corentyne River was to serve as a border between the British and Dutch Guianas. According to the agreement, the river is owned by Surinam. Since it fluctuates with the tide, "water marks" are used to define the boundaries. To record their claim to the Corentyne River, the Dutch placed a "marker" on the beach at No. 63 Village (see Map IV) to indicate the boundary.

The Corentyne River is of immense economic importance not only to the Corentyne district but to the entire country. The logging industry (Rauf 1972) depends entirely on the river for the transport of logs, since there are no roads beyond Crabwood Creek. (A projected road to connect Crabwood Creek and Orealla is now in progress, but the labour is performed on a cooperative, voluntary basis and the pace is very slow.) Farmers beyond Crabwood Creek also depend on the river to transport their products.

There are hundreds of small fishermen who fish the Corentyne River. In addition, thousands of area residents also fish the river to supplement their diet, especially during the peak of shrimp, mullet and sardine seasons. It is mandatory under Surinamese law that all fishing boats working the Corentyne River be licensed by the Surinamese government.*

Skeldon is the only sugar estate in the Upper Corentyne area. Peasant cane farming, as it is known in the Caribbean Islands, hardly exists in Guyana. Besides the sugar estate, one enterprising individual and the Upper Corentyne Lion's Club are directly involved in sugarcane cultivation. The sugar estate provides employment for some workers on the coast. However, most sugarcane workers from the coast are not directly involved in rice production. The few who are involved could be considered "marginal" rice producers. That is, they grow only enough for household consumption.

---

*During the course of field work there were rumours that goods were being smuggled--both ways--on the Corentyne River. The Guyanese were smuggling items that were banned by the government, e.g., whiskey, potatoes, sardines, etc., while the Surinamese were taking fertilizers and sugar. Several Guyanese were charged and a boat seized which was allegedly involved in smuggling sugar over to Surinam. The price of sugar in Surinam increased drastically in 1974. Surinamese informants stated that because of the alleged smuggling through the Corentyne River, the Guyanese government had requested permission to use its Coast Guards to patrol the river. This request was denied. As a result the Guyanese government cut off trade relations with Surinam.

C. RICETOWN: THE VILLAGE

Ricetown is located about five miles from Springlands and about forty miles from New Amsterdam.*

The first villagers who moved to settle in Ricetown were the descendants of ex-indentured Portuguese** and "Santantone" (a mixture of Portuguese and African) workers.*** Some of the older informants remember the Portuguese population which drifted slowly out of the village into the urban areas. No one agrees with the suggestion that the Portuguese were "squeezed out" by the more aggressive East Indian farmers. Although there are no data to support this suggestion, it seems that the Portuguese settlers moved to the urban areas to join their progressive kinsmen and occupy jobs in business and in the civil service. Although the Portuguese were stereotyped (by the East Indians)

---

*It is characteristic of rice growing villages in the Corentyne, West Coast Berbice, and West Demerara, but it cannot be taken to represent villages in the rice growing areas of the Essequibo Coast. In these areas a large landowner will rent out small parcels of land for residence and rice growing. At the same time he will hire his tenants for work on his land and in his mill. In the Corentyne, W.C. Demerara and W.C. Berbice, most villagers have their own land.

**As a teenager I knew the last two Portuguese brothers who lived in the village until their death.

***From discussion with old informants it seems that early village occupation in the area was based on concentration of a particular ethnic group. The present-day No. 72 Village was, by the end of the nineteenth century, called Hong Kong (see Map V) and was occupied primarily by Chinese. Many of the poorer Indo-Guyanese moved into these villages as being lazy farmers, all the Portuguese who lived in the village grew rice and produced at least enough for household consumption. Table XVII shows the present ethnic composition in Ricetown. Table XVIII shows the population distribution.

Until about twenty-five years ago, Portuguese Roman Catholic influence was very strong in the village. An old cemetery with huge crosses stands as a landmark. So strong was the Catholic community in the past that up to the 1930's a priest walked the 30 miles from Port Mourant to conduct mass once a month. Today there are but two Afro-Guyanese families and two Indo-Guyanese who are members of the Catholic Church in a neighbouring village.

The early ex-indentured workers who settled in the villages were tied economically to the sugar plantations. The present public road started as a track which connected the villages along the coast with Springlands, the site of an old sugar estate. The villagers, prior to the introduction of local government, dug a trench which served to drain rainfall into the nearby creeks and built a dam which served as the roadway. House-lots were occupied on both sides of the road which became the base for the present system of land distribution in the area. With the need for more efficient communication the dams were metalled with burnt earth which facilitated transportation. Until the mid-1940's, donkey carts were the most convenient method of transportation. Today most people travel by bus or hired cars.

Ricetown lacks two major social amenities, water and electricity.

---

after completing their indentures. It was only the wealthy Indo-Guyanese who moved from the sugar estates and settled in villages independently.

TABLE XVII

HOUSEHOLD COMPOSITION IN RICETOWN BY ETHNICITY AND SEX

	No. of households				No. of members				Average size of household
	Afro	(%)	Indo	(%)	Afro	(%)	Indo	(%)	
A. Nuclear									
Hu & Wi	1	(5.9)	3	(2.2)	2	(2.4)	6	(1.0)	2.0
Hu, Wi & Ch	7	(41.2)	56	(41.5)	35	(41.7)	205	(35.0)	3.8
B. Woman-Headed									
Single (old) woman	1	(5.9)	1	(0.7)	1	(1.2)	1	(0.2)	1.0
Mo & Ch	2	(11.7)	4	(3.0)	10	(11.9)	15	(2.6)	4.2
Mo, Ch & Gr-ch	1	(5.9)	3	(2.0)	7	(8.3)	12	(2.0)	4.7
C. Extended									
Hu, Wi, Ch, So, Wi & Ch	2	(11.7)	36	(26.7)	18	(21.4)	243	(41.5)	6.9
D. Chula Group									
Hu, Wi & Ch*	3	(17.7)	32	(23.7)	11	(13.1)	104	(17.7)	3.2
Total	17	(100)	135	(100)	84	(100)	586	(100)	4.4

*Not all chula groups have children.

Source: Data collected in Ricetown, 1974.

TABLE XVIII

POPULATION DISTRIBUTION IN RICETOWN BY AGE AND SEX

	Sex				
Age	Male	%	Female	%	Total
-1	5	1.4	3	0.9	8
1-9	72	20.6	83	24.2	154
10-19	73	20.8	57	16.7	130
20-29	60	17.1	44	12.9	84
30-39	50	14.2	52	15.1	122
40-49	46	13.1	52	15.1	98
50-59	34	9.7	38	11.1	67
60-69	8	2.2	10	2.9	18
70+	3	0.9	4	1.1	7
Total	351	100	343	100	688

Source: Data collected 1974.

From 1961 until 1972 one wealthy individual bought a small electrical plant and supplied most of the village with electricity from 6:00 p.m. to 10:00 p.m. daily. Because of the lack of spare parts the plant is no longer in use and the village is again without electricity. In 1973 the wealthiest farmer in the village bought a small electrical plant, but refused to supply electricity to anyone else and uses it only two or three times per week.

The government is in the process of electrifying the area. However, electricity has reached only as far as No. 58 Village on one side and No. 74 Village on the other (see Map V). Several government engineers assured me that this is because of the limited generating capacity of the power stations in operation in the area. On the other hand, most informants suggested that since the area is a known PPP stronghold (see section F), the PNC government is withholding infrastructural facilities as a form of political pressure. Most houses have piped water, but only seven have inside toilets which are unusable anyway because of the low water pressure.

D. ACQUISITION OF LAND IN RICETOWN

There is no exact date recorded of the first occupation of rice land in Ricetown. However, according to most old informants it seems that the occupation of the "first depth" (see Figure 4, Chapter IV) began about 1895 and continued until about 1905. Occupation went through four different phases. Initially, the "first checking" was occupied, followed immediately by the occupation of the "second checking," then by the "first hundred rods" and finally by the "last hundred rods" (these terms are still in use).

Prior to the empoldering of the "second depth" there were only 186 acres of semi-drained and irrigated lands in Ricetown. Looking at Figure 7 we see that Ricetown has "ninety quarter shares" (discussed in Chapter IV) divided proportionately. Each quarter share in the residential area has four house lots, about quarter acre of "reef section" and two acres of rice field. Prior to the distribution of the "second depth" in 1946, every extended family in Ricetown owned at least a quarter of a share of land. Division of the second depth was also done proportionately, thus each quarter share received six additional acres.

At first, the land distributed in the "second depth" was virgin forest and required clearing before it could be placed in production. Initially, there were no bulldozers available and farmers depended upon the use of manpower, with axe and cutlass to clear the bush. This was done during seasons other than the crop season. Most farmers with twenty-four acres and more, in order to expand their operation, entered into lease agreements with individuals both inside and outside of Ricetown.* The terms of the lease were that the tenant would pay no rent for the first three years and during the second three years he

---

*Between 1946 and 1948 eight individuals from the sugar plantation area of the Lower Corentyne emigrated and settled permanently in Ricetown leasing uncleared lands. Five of these eight individuals later bought land and settled in Ricetown. The other three received land in Black Bush Polder and are now settled there permanently.

Four families from within Ricetown who had the manpower also entered into lease agreements with those who owned more than twenty-four acres.

FIGURE 7

LAYOUT OF RICETOWN

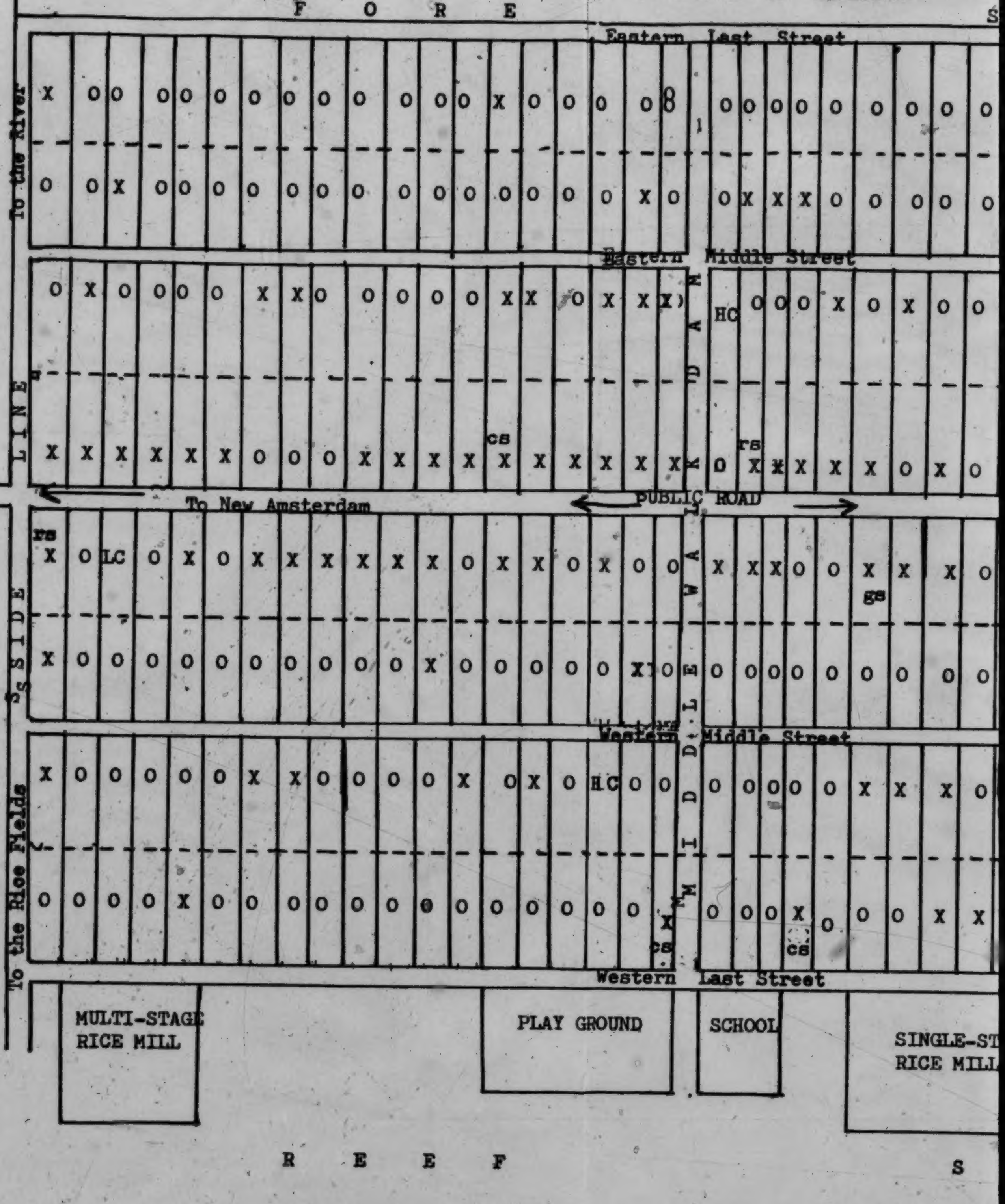
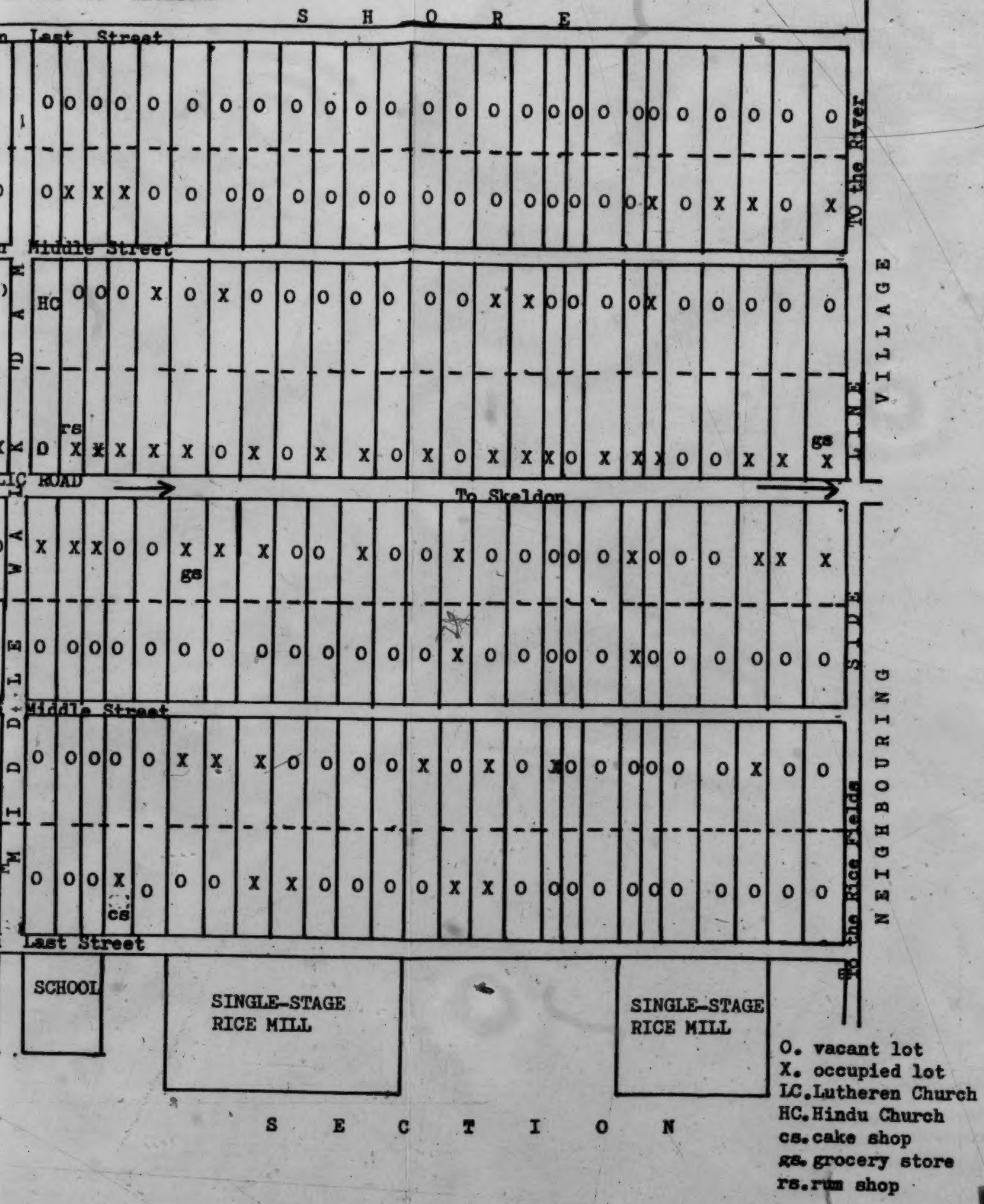

F O R E
S
Eastern Last Street
To the River
Eastern Middle Street
VILLAGE
LINE
NEIGHBOURING
SIDE
MIDDLE WALK DAM
HC
rs
cs
To New Amsterdam
PUBLIC ROAD
rs
LC
gs
Western Middle Street
HC
To the Rice Fields
cs
cs
Western Last Street
MULTI-STAGE RICE MILL
PLAY GROUND
SCHOOL
SINGLE-ST
RICE MILL
R E E F
S
X
O

FIGURE 7

LAYOUT OF RICETOWN


SHORE
Last Street
Middle Street
HC
rs
LIC ROAD
To Skeldon
gs
Middle Street
cs
Last Street
DAM
MIDDLE WAL
TO the River
VILLAGE LINE
NEIGHBOURING SIDE
To the Rice Fields
SCHOOL
SINGLE-STAGE RICE MILL
SINGLE-STAGE RICE MILL
SECTION
O. vacant lot
X. occupied lot
LC.Lutheren Church
HC.Hindu Church
cs.cake shop
gs.grocery store
rs.rum shop

would pay only half rent. At the end of six years the tenant would have to pay full rent (i.e., four bags of paddy per acre).

Later, while the clearing of forested lands was one thing, cultivating it was another matter altogether. As I have pointed out in Chapter VII, with cow and plough technology (in the second period) it was not possible for a family with three adult males to cultivate more than fifteen to eighteen acres. Thus, when tractors were introduced in the mid-1950's and combines in the late 1950's the impact was not the displacement of labour but the need to appropriate lands from tenants.

Given this trend of property inheritance in Ricetown where every son is expected to receive a share of his father's property, one would expect that land holdings would be far more fragmented than they are today in both the residential and cultivation area (see Table XVII). There are two main reasons. First, becuase small plots are not profitable some small farmers are forced to sell their plots (see Case 6). Second, we find that among the middle farming families emigration is relatively high, thus fewer children stay at home to share in the father's property.

Today, there are seven cooperatives in the "third depth" in the Block III area (see Map IV). Fifty-six heads of households in Ricetown indicated that they are members of these cooperatives. The major problem, however, is that because of the lack of drainage and irrigation, some of the cleared lands are not in use. In an interview, the Minister of Agriculture indicated that under the government's "second phase" program in the development of the rice industry, all seven cooperatives in the area will be drained and irrigated.

E. HOUSEHOLD ORGANIZATION AND THE FAMILY

Before discussing the family and household, I would like to state precisely what will be used in this study to define a "household" since much of the literature on the subject differ somewhat from my data on Ricetown. Horowitz (1967) in his study of Morne-Paysan, a Martiniquan village, states that a household includes "those persons who habitually reside in the same structure and who have a common fund for consumptive use" (39). M. G. Smith (1962) in his study of the West Indian family states that a "household consist of those persons who habitually share a common shelter and food" (11). Klass (1961) in his study of Amity, an Indo-Trinidadian village, states that a household exists where "all members live in one house, share a common kitchen and have a common family purse" (44). R. T. Smith (1956) in his study of three Afro-Guyanese villages states that a "household group normally 'cooks one pot' and all members are fed from it" (51). In this study I will define a household group as *all persons sharing a common hearth (chula) and a common purse but not necessarily living in the same house.* The main reason for this is that we find that a number of "family units" live under the same roof but do not necessarily share a common hearth (chula or fireside--see Figure 9) or a common purse. This definition seems to agree with Vatuk (1972:51) in her study of two willages, Ganeshpur and Kalyanpuri, in Northern India. She states that "this definition of a household resolves the problem in classifying cases where agnates--father and son of two brothers with wives and children--live in the same house . . . but cook separately and have separate income and budgets" (ibid.:50).

FIGURE 8

EXTENDED HOUSEHOLD COMPOUND IN RICETOWN

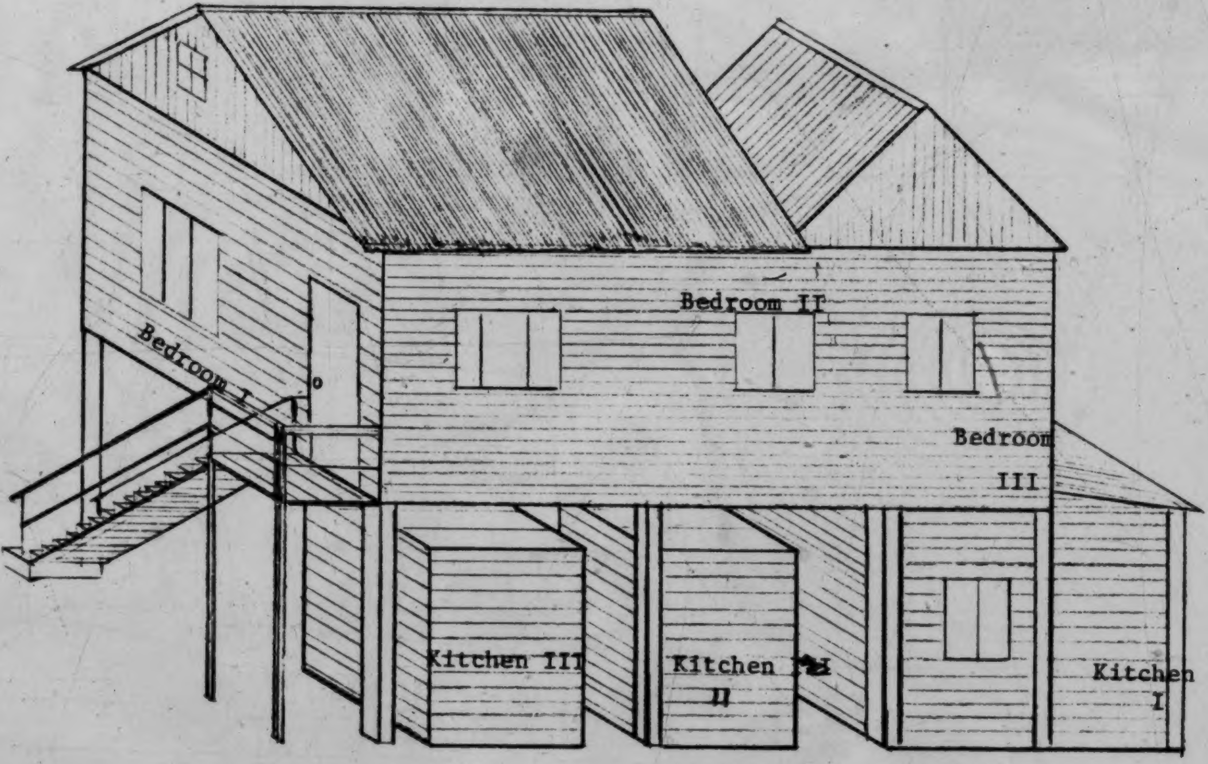
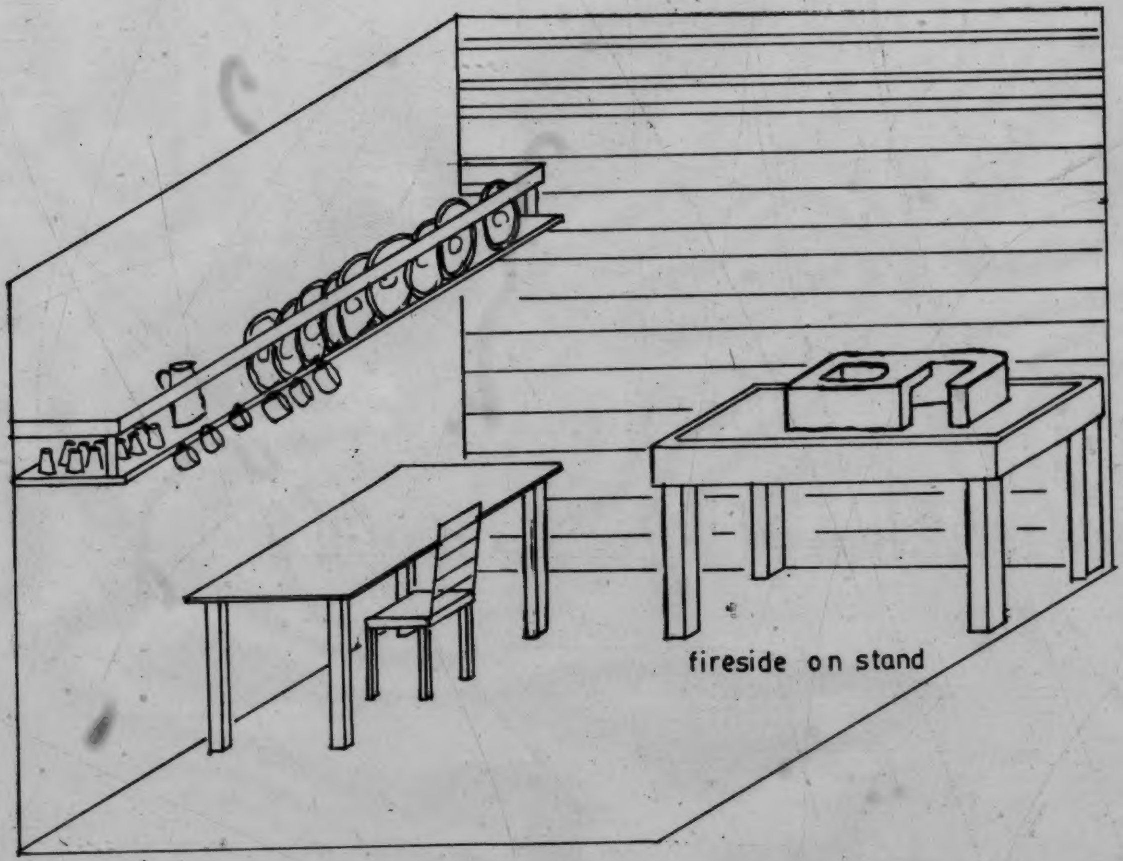

Bedroom I
Bedroom II
Bedroom
III
Kitchen III
Kitchen
II
Kitchen
I

FIGURE 9

INSIDE VIEW OF A KITCHEN


fireside on stand

Ricetown exhibits four types of household (see Table XVI). One, the *nuclear household*: In this category, besides those families composed of a man, his wife and children, it also includes four couples who recently married and have no children. The second category is the *woman-headed household*. A woman-headed household in Ricetown is not the same as the "matrilineal family" discussed by M. G. Smith (1962) among West Indian families and by R. T. Smith (1956) among the Afro-Guyanese families, nor is it the same as the "denuded family" discussed by Edith Clarke (1957) in her study among Jamaican families, where the husband/father has either emigrated to work or has abandoned the woman and her children. In Ricetown, woman-headed households among the Indo residents occur at the death of the male head and then because of necessity (where the sons are too young) the woman takes over the reins of leadership. Among the Afro residents woman-headed households (besides the death of the male head) also occur because of emigration of the male heads.

The third category is the *extended family household*, where the man, his wife and children and his married son (in no case in Ricetown is there more than one married son and his wife and children living within the extended family), and the son's wife and children live in the same house, share a common hearth and purse, but where the father has control over his son and his son's wife's labour.

The fourth, and probably most complex household group, is what I will refer to as the *chula group household*. A chula group consists of a man, his wife and child or children. It is an economically *independent group*.* However, a chula group does not live in an independent dwelling unit (see Figure 9). It should also be emphasized that although the chula group shares the house of the man's father, the father has no control over his son (head of the chula group) or his wife's labour. A son living in a chula group may exchange labour with his father or with another brother who may have also established a chula group in the father's house. Exchange of labour in these cases does not occur as often as one might expect. The main reason for this is that heads of chula groups in every case are sons of poorer farmers and grow very little rice which, with the exception of reaping, requires little additional labour.

---

*Although we can speak of the economic independence of a chula

Looking at Table XVI we see the predominance of the nuclear rather than the extended household in Ricetown. It is interesting to note that among both the Indo and Afro residents, over 40 percent of the households reside in nuclear family dwelling units. One of the major differences between Indo and Afro groups exists among women-headed households where there are 23.5 percent Afro residents as opposed to 5.7 percent Indo residents (already discussed). Another difference is with the extended household where there are only 11.6 percent of Afro residents compared with 26.7 percent of Indo residents. We also find that within the chula group household the Indo residents represent 23.7 percent as opposed to 17.7 percent of Afro residents (see Table XVI). The explanation for this difference is that the Afro residents of Ricetown are relatively wealthier than the Indo residents and can afford

---

group in Ricetown, it is difficult to measure social independence. Parents continue to have strong social influence over their children long after they establish independent dwelling units. This is especially true in cases where segmentation occurred without strained relationship.

to set up their children in independent dwelling units immediately after they are married.

One of the major differences between the nuclear and the chula group household is that the former resides in an independent dwelling unit while the latter shares a dwelling unit.

The data illustrate what Goody (1972:17) referred to as the "development cycle" of the household group. First the nuclear family developed into an extended household group; the extended household group generates a chula group; later the chula group sets up in an independent dwelling unit as a nuclear family; and so the cycle continues. Vatuk (1972:50) pointed out that segmentation by stages is particularly typical of rural areas. However, I want to emphasize that this type of segmentation in Ricetown is a recent phenomenon.

Traditionally, sons are expected to live with their parents, at least for a few years after they are married, until their parents can afford to "set them up"* in separate dwelling units. This pattern of setting up usually begins with the eldest son and continues until the youngest son is left to inherit the family's property. In cases where there is only one son there is a great social pressure on him to remain

---

*For further discussion on marriages, kinship and the family among the Afro-Guyanese see R. T. Smith, *The Negro Family in British Guiana*, 1956. For discussions on the Indo-Guyanese family and marriage, see R. T. Smith and C. Jayawardana, "Hindu Marriage Customs in British Guiana," *Social and Economic Studies*, Vol. 8, 1959; L. Despres, *Cultural Pluralism and Nationalist Politics in British Guiana*, 1966, pp. 74-86; and M. A. Rauf, *Crabwood Creek: A Study of Cultural Change and Ethnic Identity*, 1972, Chap. 7.

with his parents after marriage and take over the family's responsibilities and later inherit the family's savings. In several instances, sons are prepared to "live one-side" (in a chula group) before the family can afford to set them up in a separate dwelling unit. As a result, it is not unusual to see up to two or three married sons living in their parent's home establishing what I earlier referred to as "chula groups" (see Figure 8) with completely independent budgets (see Case 7).

Today, most young men and women are interested in setting up their own homes before or shortly after they are married. The economic problems involved in setting up young men in lower class families provide a major barrier to independence from the parental family. Today poorer families are forced to remain together for a much longer period. It is important to recognize that such extended families live under severe tension becuase of their financial inability to live "one-side." Thus, in an attempt to analyze the family (extended or nuclear), we must take into account all the socioeconomic constraints operating in an underdeveloped economy. The changing feature of the household unit among the residents of Ricetown raises some serious questions about the stereotyped notions of the "extended" and closely knit Indo-Guyanese family. Do the Indo- and Afro-Guyanese families that remain extended over the years do so because of cultural preferences or because of economic necessity? The economic importance as well as the social responsibility to his natal family of a young married man is probably best explained by Smith and Jayawardana:

> Marriage for a young male is synonymous with accepting responsibility for a wife and any children that may be born, and a young couple who live with parents-in-law did so under real economic pressure (1959:339).

Large families in the "pre-tractorized" years meant a larger work force, allowing more manpower to be organized under the central supervision of the father or elder brother. The family that stayed together and worked together was better able to cultivate more land and therefore accumulate more wealth.

Silverman, in her study of Bush Lot, on the West Coast of Berbice, pointed out that "the wealthy keep their families together for longer periods, those who maintain the extended family unit have a wealthier household" (1973:51). The (extended) families that stayed together for longer periods became the wealthier families. It is not the wealth that holds the family together, it is the family that creates the wealth. However, we should also recognize that the maintenance of the "extended family" as pointed out by Silverman is applicable to the pre-mechanized period (see Chapter VII).

In Ricetown, most men choose their spouses from within a radius of twenty miles of their natal home and their children grow up with their paternal relatives and pay regular visits to their maternal grandparents.

After the marriage a young man takes his wife to his parents' home where they reside until the young man can independently or with the assistance of his father and/or father-in-law, build his own house. In most cases fathers provide their sons with house lots on which to build their houses.* In some cases a wealthy man will allow his son-in-law and daughter to come and stay with him or will provide them with assistance to set up themselves independently.

Until the early 1950's, it was not customary in the rural districts to marry a girl who could not "plant rice." This norm was broken only by well-to-do families who could afford to hire labourers. Today, the pressure to "live-in-one" (in the extended family) is not so strong, and is the norm only where the extended family is weaker. In some cases young men are encouraged to move to independent nuclear family residences before, or immediately after they are married. An aged female informant explained the changing pattern in this way:

> You see son, in our days when we got married, we were too small to know and to do any (domestic) work, so we had to live with our mother-in-law to teach us. Today, the girls are grown women when they get married and they don't need anyone to teach them anything. Not only that, today the girls could cook from a book so why would they need a mother-in-law. The girls of today could teach their mother-in-law to cook. Look at the kinds of things (household appliances) they have today, they even have machines (vacuum cleaners) to sweep their homes.

The reference to "small" in her explanation is to early and child marriage. Child marriage was arranged marriage. Traditionally, child marriages were arranged by both sets of parents when the boy was about eight to ten and the girl six to eight. After the marriage both the boy and the girl continued to live with their respective parents until the girl was old enough (approximately 14 years) to move and settle with her husband and his family. The period that the girl spent at her parents' home after marriage is referred to as kharwas.

---

*A house lot is 144 feet by 42 feet. Legally two houses could be built on one lot.

From the above we can see how under the system of child marriage there were fewer domestic problems and the extended family developed more harmoniously. The reason seems to be that daughters-in-law depended on their mothers-in-law for training, thus going through a long socialization process, while providing labour for husband and in-laws reciprocally. Besides which, in child marriage the new brides (after kharwas) were not expected to hold any definite views on economic and other social matters. Daughters-in-law were expected to be submissive to their mothers-in-law. One important point is that child marriage served as a means of securing extra labour for the family. It also explains why sons are preferred to daughters since they are potential recruiters of labour.

Today kharwas takes a different form. Following the wedding the bride goes to the bridegroom's parents' home where she spends one night (the bride and the groom do not sleep together on the first night). On the following day she returns to her parents' home for kharwas. Kharwas may last from a day to a week--which is determined by the pandit (priest). During the course of field work several weddings took place in the area. Two young men from well-to-do families took their wives to the West Indies for their honeymoon instead of having kharwas.

Today, the extended family which once predominated in rural Guyana is not as significant (see Table XVI). Those that do survive (especially in poor families) often have serious tensions. There are many factors that can contribute to the tension which sometimes result in quarrels which ultimately lead to the couple "moving one side." (Interestingly, men try to avoid involvement in these arguments and sometimes both the mother and the wife "get a flogging" from father and son respectively.) In some cases a newly married young woman could find that not only is she under her husband's and mother-in-law's supervision but [illegible]e is also supervised by one or two of her of her husband's elder brothers' wives. She may feel that because she is from a wealthier family she should not take orders from her sister-in-law from a less wealthy family. She may also feel that she is denied direct access to her husband's earnings, and because of this cannot afford the minimal luxury to which she has been accustomed; or there may be too many individuals around the house and she cannot enjoy as much privacy as she may wish. All these contribute to the stress and strain in extended living.

In case of a quarrel, the girl may "pack her bags" and return to her parents' home and insist that she will not return until her husband establishes a separate kitchen or "moves one-side." There are two ways in which a girl's parents could respond: (1) If they are wealthy, they could invite their son-in-law into ther home and encourage him to "move one-side" with their promise of financial assistance. (2) In some cases the girl's parents would encourage their daughter to return or even take her back to her husband's home with the motherly consolation: "all of us went through this." Thus permanent separations are rare in Ricetown. However, in cases where it does occur, influential individuals are asked to intervene and settle the matter before it goes to court.

F. ECONOMIC ACTIVITIES AND SOCIAL STATUS IN RICETOWN

In discussing social stratification, social scientists are forced to assign to individuals, domestic groups or household units, a place in a hierarchical structure. The position or status assigned to individuals or groups is based on the prestige (economic, social and/or political) which the individual or group may enjoy in society. The use of social stratification, however, encourages an oversimplified view of modern social structure (Lenski 1966:2).

Any discussion of agrarian social stratification must take a number of variables into account. Stavenhagen (1975:19-39) in his discussion on how schemas for social stratification are composed, noted the three most important dimensions in society as (1) economic, (2) social, and (3) political (also see Weber 1947:428-429). According to Stavenhagen:

> Each of these dimensions has its own stratification: the economic, represented by income and the goods and services which an individual possesses; the social, represented by the prestige and honour he enjoys; and the political, represented by the power he exercises (1975:23).

The dimensions noted by Stavenhagen raise two important points. First, by what criteria do we assign individuals to a particular group: (a) by a position he attributes to himself, or (b) from a group affiliation in which he is recognized and accepted by his peers?* The second point (which answers some of the questions raised above) is that, although an individual may enjoy high economic status in the village (Ricetown) it does not follow that he automatically enjoys social and political prestige. Or, as Weber noted, "property as such is not always recognized as a status qualification but in the long run it is, and with extraordinary regularity" (see Gerth and Mills 1957:187). I shall demonstrate in section G that an individual may enjoy both economic and social prestige but be denied political status and influence in the village. I shall further show that although education is the most important means of social mobility, educators do not necessarily enjoy social and/or political influence (see section G).

---

*For further discussion of my personal experience see Appendix I.

Since rice production is the major activity in Ricetown, in order to establish social and/or economic status we must ask: (1) whether or not the land cultivated by a household is enough to provide the household with enough economically for its basic needs; (2) or, is it so small that members of the household must seek additional employment? (3) or, is there too much land to cultivate so that wage workers must be employed or that the land must be rented?

Before we attempt to answer these questions, there are a few other factors which must be taken into consideration. Although rice production is the main source of income in Ricetown, there are several individuals who earn money outside the direct process of production. For example, there are fifteen individuals from middle status families who receive remittances (see Table XXI). Interestingly, beyond the additional value money received in the form of remittances, there is an additional prestige from having access to "foreign" currency (see Cases 3 and 4).

In the pre-mechanized period (Period II) a farmer with four shares of land (32 acres of riceland) could not cultivate all his riceland, as such, and was forced to rent part of his holdings to tenants making him a farmer/landlord. With the advent of mechanization most farmer/landlords re-appropriated their lands from their tenants and cultivated it themselves (see Case 5). Today all land preparation in Ricetown is done by tractors, by ploughs and by other necessary implements. All reaping is done by combines (mechanical threshers). Those who do not own tractors and combines (133 households) must rent them. From Table XXI we can see that nineteen of heads of households in Ricetown own tractors and combines, and hence *they control the means of production*. On the other hand, processing and transportation are controlled by the three truck/rice mill owners.

We find that 125 or 72.3 percent of the farmers grew less than ten acres of rice and are listed as "poor." Within this group we find that 16 households or 10.5 percent of the population cultivate no rice; 65 households or 42.8 percent grow between half to four acres (see Table XVIIIB). The majority of the last two groups are generally among the "chula" and the "extended" households (see Table XVI). Further, since most adults from the chula and extended household groups cultivate little riceland they depend on employment throughout the year. Most of these household heads indicated that they were employed in three and four different jobs throughout the year--from paddy and rice transportation, paddy drying and milling to fishing.

It is difficult to assign social status to individuals in rural communities. From the data presented, I shall use three categories to describe social status groups: (1) Rich, (2) Middle, and (3) Poor farmers. To assign individuals to each group a number of variables must be considered, such as the number of acres cultivated, ownership of property including tractors, income from other sources, and utilization of wage labour. It would be misleading, however, to use utilization of wage labour as a basic index of social status without explaining some recent changes in the social relations of production. Several individuals from the middle and a few from the lower status groups may employ wage labourers to reap their paddy and they in turn go out and work for wages.

From Tables XIX A and B, I have calculated Table X X in which I have categorized those who cultivate from 0 to 9 acres as "poor," from 10 to 19 acres as "middle," and from 20 acres and above as "rich" farmers. These categories will also reflect "income from other sources." By Guyanese standards, 9 acres are more than the average cultivated. (Government schemes, such as Black Bush Polder are exceptions, since there the average plot is 15 acres.) For 9 acres the total yearly income would be $1,603.35. This figure, however, does not tell the entire story, if we compare these profits to the income of an unskilled labourer working at the minimum wage of $7.00 per day for a 50-week year (he will earn a total of $1,750). The unskilled worker is making $146.65 more per year than a farmer with 9 acres of cultivated riceland. The unskilled worker does not have to worry about adverse weather conditions, fluctuations in prices, insects, weeds or a host of other problems. At the same time, the worker may be protected by a union and insurance against income loss due to sickness. These differences force many small farmers to sell their small plots and search for jobs. In response to a question ("Given the present conditions in the rice industry, if you had 10 acres of riceland would you prefer to continue as a farmer or would you prefer a salaried job?") 114 out of the 152 heads of domestic units said they would prefer a salaried job.

Comparing Tables XIX and B, we see that of the 25 landless domestic units in Ricetown, 10 of them rent land for cultivation. Nine of those who own between 5 and 9 acres also rent land for cultivation, while only 1 person who owns between 10 and 14 acres rents land for cultivation. It is significant that there are only 4 landlords and 20 tenants. The reason for this is that a man (landlord) will prefer to rent 4 acres (especially if the 4 acres are in 4 different plots) to 4 different tenants than to rent them all to one tenant. The motivation, according to landlords, is to "help the poor boys out," so that they may at least grow enough rice for family consumption. More often than not, the tenant is a kinsman of the landlord (see Case 7).

Within the past decade, exchange labour in Ricetown has been significantly reduced. This is due mainly to changes in the means of production (see Chapter VII). Most "middle" status farmers indicated that they preferred to employ "wage labour" to reap their paddy and in turn go out and work for wages for others. This type of arrangement provides a degree of independence when compared to exchange labour or "making hand" (for further discussion on "making hand" see Chapter VII), where the relationship becomes obligatory. Several cases have been reported where sons have been employed (paid wages) by their fathers, and brothers employed by others. When questioned regarding their preference for employing wage labour over "making hand," the majority of farmers gave this reason:

TABLE XIX A

X

NUMBER OF ACRES OF RICELAND OWNED IN AND OUTSIDE OF RICETOWN BY THE RESIDENTS OF RICETOWN

No. of domestic units								
Indo	%	Afro	%	Total	%	No. acres	Total Acreage	Percentage
25*	(18.5)	2	(11.7)	27	(17.8)	0	0	0.0
47	(35.0)	3	(17.6)	50	(33.0)	1- 4	96	12.0
31	(23.0)	5	(29.4)	36	(23.7)	5- 9	184	23.0
11	(8.1)	3	(17.6)	14	(9.2)	10-14	126	15.7
14	(10.3)	2	(11.7)	16	(10.5)	15-19	114	14.2
4	(3.0)	1	(6.0)	5	(3.2)	20-24	96	12.0
2	(1.4)	1	(6.0)	3	(2.0)	25-29	102	12.7
1	(0.7)	0	(0.0)	1	(0.6)	30+	84	10.4
135	(100.0)		(100.0)	152	(100.0)		802	100.0

TABLE XIX B

NUMBER OF ACRES OF RICELAND CULTIVATED BY RESIDENTS OF RICETOWN

No. of domestic units								
Indo	%	Afro	%	Total	%	No. acres	Total	Percentage
15	(11.1)	1	(6.0)	16	(10.5)	0	0	0.0
60	(44.5)	5	(29.3)	65	(42.8)	.5- 4	105	13.0
40	(29.7)	4	(23.4)	44	(29.0)	5- 9	214	26.7
12	(8.9)	2	(11.7)	14	(9.2)	10-14	156	19.4
3	(2.2)	3	(17.6)	6	(4.0)	15-19	95	11.9
3	(2.2)	1	(6.0)	4	(2.6)	20-24	94	11.8
1	(0.7)	1	(6.0)	2	(1.3)	25-29	54	6.8
1	(0.7)	0	(0.0)	1	(0.6)	30+	84	10.4
135	(100.0)	17	(100.0)	152	(100.0)		802	100.0

*As a teenager I knew six of these individuals personally. They had owned riceland and were forced to sell it. The most frequent explanation provided is that they could not afford the initial capital for investment and were better off if they could find full-time employment.

Source: Data collected 1974.

TABLE X X

DOMESTIC UNIT AND STATUS GROUPS IN RICETOWN

	Indo	%	Afro	%	Total	%
Upper	5	(3.8)	2	(11.7)	7	(4.7)
Middle	15	(11.1)	5	(29.4)	20	(13.1)
Poor	115	(85.1)	10	(58.9)	125	(82.2)
TOTAL	135	(100.0)	17	(100.0)	152	(100.0)

Source: Calculated from Table XVII.

> If someone 'makes hand' with you to reap your six acres of paddy with combine it takes about four hours. So you owe that person a hand. Suppose when he wants to reap his six acres the combine breaks down for two or three days, it means that you are obliged to stick around for two or three days. Or suppose it rains for two days you are obliged to stick around until the combine is repaired or it stops raining. On the other hand, if you employ (pay) someone to work for you, you owe them nothing. When someone employs you and it rains or the tractor breaks down they are obliged to pay you.

Prior to mechanization, it was difficult for one family to farm more than ten or twelve acres with "cow and plough"; as a result the wealthy landowners were forced to rent a part of their holdings to landless farmers. With the advent of mechanization, most wealthy farmers took back the lands they had rented to the small farmers and are now cultivating them themselves. There are 21 farmers who own more than 15 acres, but only 8 farm more than 15 acres (see Tables XIX A and B). Farms of less than 15 acres can hardly afford the purchase of a tractor. If we compare the total number of acres in the village against the number of tractors in Ricetown, we will find that there are approximately 42 acres per tractor. Thus tractors are both in demand and beyond the grasp of the majority of Ricetown farmers.

Most of the farmers purchased their tractors in the early 1960's and they did so with two objectives in mind: (1) hiring out their tractors to smaller farmers; and (2) expanding their landholdings through cooperatives. Although cooperatives have been formed and are functioning, the necessary infrastructural services, e.g., drainage, irrigation and transportation facilities, have not been provided. Farmers have lost bumper crops because of the lack of these facilities; as a result, some lands in the Corentyne rice cooperatives now lie abandoned.

As mentioned earlier in this section, employment of wage labour cannot be used independently to designate social status because some poorer farmers employ wage labour and also work for wages. The 16 heads of households (see Table XXI) who indicated that they employ "all wage labour" are the 8 listed as "professionals" (see Table XXII), the 4 "shopkeepers," 3 listed as ricemill/truck owners and 1 of the rich farmers.

Among the 15 heads of domestic units who indicated that they grew no rice are the 3 individuals who were employed at the Skeldon sugar estate. The other 12 individuals stated that they were employed in three or more jobs (see Table XXII) and were often referred to in the village as "Jack of all trades."

There are few individuals who earn a significant income outside of direct rice production: a small group of professionals (school teachers, clerks and a lawyer), shopkeepers, a hired car driver, the three truck/ricemill owners, tractor owners who rent their equipment, and three sugar estate workers. With the exception of the three sugar estate workers and one professional, all the rest own or farm more than 10 acres.

Fifteen heads of domestic units stated that they have cattle, but, more importantly, only 4 indicated that they had more than 20 head. Dumont, in his 1963 study of agricultural economics in Guyana (which emphasized the Black Bush Polder area), suggested that the East Indians who keep cattle do so for the purpose of giving dowries. This suggestion is incorrect. Cattle are kept primarily for economic purposes and only secondarily for any ritual or religious reasons. In

TABLE XXI

USE OF WAGE LABOUR

No. of domestic units	%	Proportion of wage labour employed on rice land
16	10.5	All
20	13.2	More than half
40	26.4	Less than half
61	40.1	None
15	9.8	Grow no rice
152	100	

Source: Data collected in 1974.

TABLE XXII

WAGE EMPLOYMENT AND OTHER SOURCES OF INCOME IN RICETOWN

Heads of domestic units	Job description	Annual average income (G $)
8	Professionals	3,800
1	Hired car owner	2,800
3	Trucker/miller	5,200
19	Tractor/combine owners	3,700
3	Sugar estate worker	2,200
2	Ranger for the local authority	800
4	Shopkeepers	2,300
36	Paddy and rice transporting	700
85	Paddy drying and milling	455
15	Gardening	125
12	Cattle	900
20	Poultry/stock rearing	125
8	Carpenters	1,200
6	Tailoring	800
8	Fishing	200
15	Remittances	400

*It could be misleading if we compute the figures to show how many people find employment from "other sources." The fact is that some individuals find employment in two and three occupations.

Source: Data collected 1974.

the 1940's and 1950's any farmer who had $75 would invest in a cow. It was hoped that within a year or two the cow would reproduce--if the calf was a heifer, there was the possibility of further reproduction in future; if it was a bull it would be castrated and used as a draught animal. The farmer did not need an economist to tell him that it would be more profitable to invest the $75 in a cow rather than to put it in the bank and wait to the end of the year to collect 6 percent interest. We could ask why, if cows are kept traditionally to give as dowries, only 9.8 percent of the present domestic units of Ricetown own cattle? In further criticism of Dumont's suggestion the question could be raised whether the Afro-Guyanese who own cattle do so in order to give dowries at the time of their daughter's marriage (see Case 1). In recent years most farmers have sold their animals. There are two explanations: (1) since the introduction of machinery in the rice industry, most farmers sold their oxen since there is little or no use for them; (2) cows in the residential area (producing milk, especially for family consumption) have become a nuisance on the public roads; as a result, the government has increased pound fees from $1.00 per head (in the 1950's) to $5.00 per head (in the late 1960's). Early in the 1970's pound fees increased to $10.00 per head, and according to recent (January 1976) information, pound fees went up to $24.00 per head.

Other Sources of Livelihood

Other than growing rice, farmers occupy themselves growing kitchen gardens and by fishing. As mentioned earlier in this chapter, the Corentyne River has an abundant supply of fish. Commercial fishermen sell in the sugar plantation and urban areas; the other people in the area fish in the shallow waters of the river. One method used is similar to that described by Chagnon (1977:22) among the Yanomamo, where he stated that "the juice of a vine (is thrown) into the water." In the Corentyne area the leaves of a certain tree are pounded and thrown into small pools of water. The poison derived stuns the small fish, which then float to the surface and are scooped by the handfuls or in baskets. There are other fishing methods such as the dragging of seines, casting of nets or the hanging of lines (hooks). In hanging lines a series of baited hooks are strung on a line, and several of these lines are hung during the low tide and remain until the next low tide (usually about 12 hours) to collect the catch. If the catch is beyond the family's immediate needs, it is customary to distribute it among the neighbours.

Women are involved in seine dragging more often than men. This usually involves from two to six persons. Members of households usually cooperate in these ventures. In cases where there are small children one person (usually a female) stays home as a babysitter and, interestingly, she is entitled to an equal share of the catch. Individuals who want to go out fishing but do not own a seine normally borrow a neighbour's, and on their return provide the owner of the seine with an equal portion of the catch of "seine part."

Men tend to be more involved in sweet water fishing, that is, they go out fishing in the rice-field and savanna areas with cast nets. In Ricetown 88 heads of domestic units indicated that they owned a net and/or a seine.

The kitchen garden is another important source of employment. The fencing, forking and other physically strenuous jobs are carried out by men, while the actual planting and weeding are done by women, though there is no strict division of labour in this case. Children sometimes help in weeding. Out of the 92 domestic units at Ricetown who indicated they grew a kitchen garden, only 15 produced beyond their own needs and sold their surplus to other villagers (see Table XXII). In situations where there are two and three married sons living within the extended household as separate domestic units, sometimes they do have access to the produce grown in their parents' kitchen garden.

There are no produce markets in or near Ricetown. The nearest weekly or daily market is at Skeldon. If a surplus is produced in the kitchen garden it may be either given away to neighbours or, in some cases, sold by a child. It is not unusual to see children along the road, carrying baskets on their heads, shouting "bigan, bora, tomatee" (egg plants, string beans, tomatoes). Only one woman from Ricetown is an active vendor at the Skeldon market. Besides growing her own garden she also purchases vegetables, fruits, chickens and eggs which she subsequently sells in the market.

Since employment is a major problem in the area I asked individuals why they did not take up gardening on a regular basis since there is a ready market at Skeldon. Over 90 percent of the responses indicated that theft is the main reason. One enterprising individual who had a flourishing garden away from the residential area had to build a watch house and spent the nights watching over his garden.

Emigration and Remittances

Until the mid-1950's there was not a single case of permanent emigration reported from Ricetown. During the mid-1950's few young men emigrated temporarily to Georgetown to work as tailors and carpenters. More recent emigrants from Ricetown can be divided into three categories:

(a) In the late 1950's and early 1960's the government distributed lands in Black Bush Polder (see Map IV) to landless peasants. Eight landless families from Ricetown received land in the area and as a result emigrated permanently.

(b) There is a movement of lower rank professionals from Ricetown (and throughout rural Guyana) to Georgetown. The majority are young men and women between the ages of eighteen and twenty-five who are primary school teachers, or hold other low-ranking positions in the Civil Service. These lower rank professionals are all children of "middle" farming families. They have now made the city their home and only occasionally visit relatives during holidays.

(c) Three families have moved and settled permanently in New York and there are sixteen young men and women who have emigrated (or are on student visas) to North America and who are settled primarily in New York and Toronto* (see Cases 3 and 4).

---

*Most of these individuals who now settle in Toronto, came as students to Merton College in Toronto. During the course of field work (1973 and 1974-75) I met two agents employed by Merton College to recruit students. During the course of my visit to Toronto in May 1975, I saw a few of these students who expressed their frustration at the relatively low standard of education offered by the institute. As a result many of them have quit school and are now illegal residents in either New York or Toronto.

The 17 individuals listed in (b) are all from "middle" status families. Their movement to Georgetown began in the early 1960's. Emigration of the 3 families and the 16 young men and women to North America began in 1970. With the exception of 2 students who are from "rich" families, all other emigrants are from "middle" status families, and in 6 cases, 2 children from the same family emigrated.

One important observation is that remittances are made only by children from the "middle" farming group. All the children from rich families attend school abroad and depend on their parents for some financial assistance (see Cases 1 and 2).

It is difficult to obtain information on remittances through the commercial banks. Most parents indicated that they were receiving remittances from their children abroad. From a rough calculation, it can be said that the average parent receives approximately $400 (Guyanese) annually. There are two reasons why it is difficult to obtain information on remittances. First, the banks refuse to divulge any information. Second, and most important, since 1970 the government of Guyana has banned the outflow of capital. Therefore remittances to Guyana are not transacted through the commercial banks but cheques sent to Ricetown are bought by wealthy farmers and businessmen from the area and are returned to the United States and Canada, either as funds for their children's education or as savings.

Until 1976, most parents had hoped that their children who had emigrated would establish themselves and assist their younger brothers and sisters. However, since some illegal immigrants from the Upper Corentyne area have been deported from Canada and the United States, there is great pressure on the young people to "stay home and make it." As a result many young men who have finished high school and cannot find employment are thinking seriously of joining the National Service so as to make entry into the University of Guyana easier.

G. VILLAGE POLITICS

In terms of village politics, Ricetown exhibits one unique characteristic when compared with other rural areas in Guyana (see Smith 1956; Jayawardana 1963; Rauf 1971; Silverman 1973) where one finds a keen competition for political leadership. In Ricetown, political competition or rivalry is almost nonexistent. Although Ricetown is a known PPP stronghold, two of the wealthiest farmers in the village have overtly opposed the PPP since the 1953 elections (for the sake of their anonymity I will refer to these individuals as Ramdhany and Mahashay).

Both Mahashay's and Ramdhany's fathers had emigrated to Guyana in the last decade of the nineteenth century and had served their indentureship at Plantation Port Mourant, about thirty miles from Ricetown. Through thrift and hard work, they saved some money and at the end of their indenture they each bought land in Ricetown and settled. They were the first East Indians to settle in the village. As the Portuguese and Santantone farmers began to move to urban areas, both fathers found themselves in a good position to acquire land cheaply. In some cases, they paid as little as $15.00 for a quarter share.* By virtue of their fathers' acquisition of land, Mahashay and Ramdhany inherited four and five quarter shares of land respectively. Both Mahashay and Ramdhany have considerable influence in Ricetown. Their advice on economic, marital and other domestic matters is often solicited. However, neither Mahashay nor Ramdhany has influenced or swayed any vote since 1953.

---

*A quarter share of land today is worth about $20,000. It consists of seven and a half acres of irrigated riceland, half acre in the reef section and four house lots, with the possibility of an additional two house lots.

On several occasions it was brought to my attention that both Ramdhany's wife and his eldest son (Deo--pseudonym) were PPP supporters. Deo was still living with his father and admitted that since he became eligible to vote in 1961 he has been supporting the PPP and on three occasions had made fairly large contributions to the Party. Mrs. Ramdhany refused to state which party she voted for, less because voting is one's personal choice than because it would be a further embarrassment to her husband who is known to oppose the PPP. Mahashay has one son who is studying abroad, and a son-in-law in a nearby village who went to East Germany on a PPP scholarship and is now a party organizer in the area.

Within the past fifteen years, Hansraj Haka (pseudonym) became the richest rice grower in Ricetown. Besides the eight acres he inherited from his father, he has purchased an additional seventy-four acres. He also owns two tractors, two cars and a combine, as well as other mechanical implements for rice cultivation. He boasted to me that he has never voted at an election--national or local--and probably will never do so. He attributed all of Guyana's problems to politics, and said that "the country would have been far better off if the 'white people' were still running it." Haka is aware that he is socially ostracised--even by his own kinsmen--not because of his political attitude but because of his verbal degradation and verbal abuse of others. On several occasions he boasted to me of his independence: "Ah don't borrow anything from them. Ah get me money an ah can buy any one of dem anytime. Me en fraid none ah dem."*

---

*The use of the term "afraid" was in reference to an incident which occurred in a neighbouring village. Ghamand Singh (pseudonym), a wealthy rice farmer/miller, is a vocal supporter of the PNC. Four days

Another example where neither education nor one's economic status enhances one's social prestige is the case of Mr. Rawan Das (pseudonym). Mr. Das is a headmaster of a government primary school and is an active PNC member. Mr. Das is disliked by most people in the area, not so much because he is a PNC member but more so because he is "big-big" (arrogant).

Prior to the 1973 elections, Mr. Das had an accident when his car ran off the road. Less than fifteen minutes after the accident a hundred men, women and children gathered around the vehicle. Normally, the men would have pushed the car out of the ditch or pulled it out with a tractor. However, not a single individual attempted to get the car out of the ditch. Amidst murmuring, one middle-aged woman, pointing to Mr. Das, said: "Dis man na kay fe no body and no body na shud worry wid am. Leh e go look fe a papa dem* fe help now. All ayou catch house." (This man doesn't care for anyone and no one should assist him. Let him go and look for his father them* for help now. You all go home.) The crowd dispersed. A couple hours later a police jeep pulled Mr. Das' car out of the ditch.

---

prior to the 1973 elections Ghamand Singh's brother's (Ram) daughter was scheduled to get married. Two nights before the wedding the women, as usual, gathered for the "mati core" (digging of the earth) and singing. One woman, a popular singer, so I was told, got up and announced that if Ghamand Singh's wife and children should come here she would leave. Not long afterwards Mrs. Ghamand Singh, her daughter and daughter-in-law arrived. As soon as they arrived most of the women walked out. The following day Ram begged his brother Ghamand not to come to his daughter's wedding for fear of further ostracism. As a result Ghamand and his family did not attend the wedding. This type of social ostracism or "ek mat" (one head) as it is popularly known was very effective on the sugar plantation among the East Indian indentured workers, especially against someone who was considered a "black leg" or planter informant.

*Mr. Das is known to have had close association with members of the police force and her reference to "his father them" is in reference to members of the police force.

Political activities, i.e., organizing meetings, speaking and so on, seem to be left almost entirely to the young people. The main reason for this is that they are looked upon as better able to articulate social problems, keep minutes of meetings, etc. One crucial point is that it is the high school graduates who are unemployed who are the most active. Although the four schoolteachers and the two clerks in Ricetown are known PPP supporters, they do not take part in any political activities for fear of reprisal. This is what one teacher refers to as the "politics of intimidation."

H. SUMMARY

In this chapter I have tried to provide a general description of the area in which research was carried out and in particular the village, Ricetown, in which data were collected. The chapter begins with a brief discussion on the historical development of the area and how settlement patterns began; first by the Portuguese ex-indentured workers and later by Africans and East Indians.

Farmers in Ricetown are divided into three strata: rich, middle and poor farmers. Although the main criterion used to identify these different status groups in Ricetown is the ownership and cultivation of riceland, other variables such as the ownership of tools (tractors and combines) and income from other sources, are used as an indicator of social status. More often than not it is believed that once an individual has money and/or property or education he automatically enjoys influence and prestige. This, however, is not always necessarily true, for although one may be economically poor he may enjoy high social prestige if his mannerism is in accordance with the expected norms of the village.

APPENDIX TO CHAPTER VI

CASE STUDIES

In this section I will provide seven case studies in Ricetown. Considering all the variables involved, I will try to select a representative sample for each of the three status groups discussed in Table XVIII in Chapter VI. From each of the three status groups I select two cases--one Indo and the other from Afro residence. The case studies will follow the order of: *Case 1*, a rich Afro household residence; *Case 2*, a rich Indo household residence; *Case 3*, a middle Afro household residence; *Case 4*, a middle Indo household residence; *Case 5*, a poor Afro residence household, *Case 7* , a poor Indo residence household.

Tracing property inheritance prior to the occupation of the second depth (see Table XIX A to the present, I found an interesting correlation. The first two cases (1 and 2) are direct descendants of individuals listed in Table XIX A as owning 8+ acres. The second two cases (3 and 4) are individuals who descended from families who owned 6 acres. The last two cases (5 and 6) are individuals from poor families. I deliberately omitted members of the extended household compound, not because it is too complex but because of cycle within the extended household compound (as discussed in Chapter VI) which is not stable to provide a case study.

Case 1

Mr. Ray Almond, an Afro resident 59 years old, and his wife Betty 53 years old, have been married for the past 36 years and have six children. Ray claims that his grandfather was one of the original inhabitants of Ricetown. He came from Brazil in 1865 as an immigrant worker to one of the sugar plantations, and in 1892 he settled in Ricetown. When the iron plough was introduced in 1910 Ray's father is known (by many informants) to have improvised on it, and also pioneered new techniques in land preparation. Ray's father was very active in community affairs and for many years served as chairman for one of the local authorities in the area.

Ray has five other brothers and two sisters, and all but one brother (who went to high school in the city and who resides there permanently) and one sister live in Ricetown near each other. Until 1956, Ray Almond and his wife and children lived with his father and mother and his younger brothers and sisters as an extended family (not the extended household compound as discussed in Chapter VI). In 1956 Ray and all of his brothers (with the exception of the one in the city who was given his share in cash) and the one sister who lives in Ricetown inherited from their father one quarter share of land plus two and a half additional acres of riceland, that is a total of ten and a half acres of riceland each.

In addition to the ten and a half acres he inherited from his father, Ray purchased an additional ten acres. He is also a member of a Land Cooperative in the area and as such is entitled to fifteen acres of riceland. He owns a 1974 135 HP Ferguson tractor and other implements necessary for rice production. He also owns a horse and 28 head of cattle.

Ray's eldest daughter is married to a civil servant and lives about four miles from her parents. His eldest son, Nelson, is also a civil servant. He is unmarried and lives with his parents. Nelson shares a common purse with his parents. Ray's second son, Thomas, is abroad studying and depends on his parents for financial support. The second daughter, Waneeta, recently completed commercial school and is employed as a clerk. Both the third son and daughter are attending high school in the city.

Betty Almond, besides doing the domestic chores, is quite busy with the fifty or more chickens she has. She is also busy with the kitchen garden which she grows.

After paying all expenses, including the one individual whom he employed most of the year, Ray's income, which includes earnings from sale of rice, rental of tractors and sale of cattle, is a little over six thousand dollars--this excludes his son's and daughter's earnings.

Case 2

Mr. Bal Nankumar, 64 years old, and his wife Sookhia, have been married for the past 44 years and have seven children, three sons and four daughters. Bal's father came from India in 1882, and after completing his indenture period he continued working on the plantation until 1901 when he bought two quarter shares of land and settled in Ricetown. Several old informants agree that Bal's father was one of the first Indo residents in Ricetown.

Until 1957, Bal, his wife and children and his elder brother, Motee, and his (Motee) wife and children lived together. When the two brothers separated, Bal inherited approximately two quarter shares of land, 44 heads of cattle and a 35 HP second-hand tractor. Today he owns 25 acres of riceland and 35 heads of cattle. According to most people in Ricetown, Bal is one of the most well-to-do persons in Ricetown. The main reason for his success is that he had invested his money wisely in his children and their education.

Bal's eldest son Ravi is a qualified schoolteacher. Before Ravi got married in 1969 his father built him a house. All four of Bal's daughters have completed high school. Three of them are schoolteachers and married; the fourth is working as a clerk and still lives with her parents. Bal's second son is studying abroad while his youngest son is attending high school in the city on a government scholarship.

Because of the lack of assistance Bal employed one individual throughout the year (primarily to look after his cattle and do other odd jobs). He also employs others during the peak crop season. After paying all expenses he calculates his average income from the sale of rice and cattle at approximately $5,000 annually.

Case 3

Moses Harrison, an Afro resident 49 years old, and his wife Kathleen 47 years old, have been married for the past 23 years and have nine children. After marriage in 1951 Moses lived with his parents for another four years when his father built him a house. The same year that Moses moved "one-side" he inherited 11 acres of riceland from his father. Two years later he bought three acres of riceland and the following year he bought a second-hand tractor. Moses also inherited six head of cattle and he now has 16 head.

Moses' eldest son, John, completed high school in 1972 and a year later emigrated to New York where he settled permanently. John makes a regular monthly remittance to his parents. Moses' first daughter, Rita, also completed high school and she has come to Canada to study. She eventually got married and settled in Toronto. Rita also makes occasional remittances to her parents. Both Moses' second son and daughter are attending high school in the area. The other five children are all in primary school.

Kathleen is a very keen mother and pays special attention to her children's social mannerism and cleanliness. Kathleen is one of the most well-liked persons in Ricetown and is always ready to help anyone with advice or a loan of a few dollars. She is also very hard working.

After her children leave for school she would either work in her garden, go to the rice mill and collect bhoosee (rice husk) for her chickens, or go fishing with her neighbours.

Moses Harrison estimates that with the remittances from his children abroad, his hard working and thrifty wife and income from the sale of rice and cattle, he earns about $4,500 annually.

Case 4

Roopchand Singh, age 44, and his wife Rookmin, age 40, have been married for the past 22 years and have six children. After Roopchand married in 1952 he and his wife lived with his parents for two years. With the assistance from both his father and his father-in-law, in 1954 he built a house adjacent to his father's. The same year he inherited six acres of riceland from his parents and five acres from his father-in-law. At the time of his marriage, he also inherited from his father-in-law four head of cattle and ten head of sheep. Today he has 14 acres of riceland, his cattle have increased to 19 and his flock of sheep has increased to 27.

Roopchand's eldest son Prem is 22 years old. After Prem completed high school in 1970 he joined the Police Force. He is married and resides with his family in Georgetown. His wife is a schoolteacher. Prem's youngest brother Sookchand is living with him and is attending high school in the city. Although Prem does not assist his parents directly, his father is happy with the contribution he is making, not only by paying Sookchand's school fees and providing him with free board and lodging, but also by giving him pocket money. Roopchand's eldest daughter Savita, 20 years old, emigrated to Canada in 1972 where she now resides permanently. Savita makes substantial remittances once or twice a year. Ramdei and Phoalmatie, Roopchand's second and third daughters, are attending commercial and high school respectively. Basdeo and Lekhram are both attending primary school.

Besides the domestic chores, Rookmin spends most of her time attending the small cake shop. Although the profit from the cake shop is not substantial, Rookmin contends that "it is better than nothing."

Roopchand estimates with the sale of sheep, one or two head of cattle, rice, and the remittance he receives from his daughter, his annual income is about $5,000 annually.

Case 5

David Sampson, an Afro resident 50 years old, and his wife Julie, 44 years old, have been married for the past 22 years and have four children. David was born about three miles from Ricetown. Shortly after David and Julie got married he moved and settled in Ricetown. He was "given" a house lot to build a house by one of his wealthier, distant relatives. From the same relative David leased seven acres of forested riceland (conditions of the lease are discussed earlier in this chapter). In 1959 David's landlord and distant relative bought a tractor and asked David to give up the lease on the land. David refused and for the next four years waged a court battle. Finally in 1953 David gave up his tenancy. Another wealthy distant relative, out of pity, rented one acre to David, which hopefully would provide him with enough rice to eat.* He is a member of a land cooperative and hopes that with proper drainage and irrigation he should be able to live more independently.

---

*Most older informants feel it is immoral to let anyone in Ricetown "buy rice," and that some of the rice farmers should rent at least one

David is considered a "jack of all trades." During the peak crop season when jobs are plentiful he works as a porter. Out of the peak season he works as a fisherman--both fresh and walt water fishing. He also finds odd jobs with the local authorities. On two occasions David was abused (in rum shops) for getting jobs with the local authorities because he is a PNC supporter. This, he has confided in me, is not true.

Paul, David's 18-year old son, dropped out of school two years ago. He finds part-time employment during the peak crop season as a porter and also drying paddy. Paul also finds the odd job as carpenter's helper and is planning to apprentice as a carpenter. David's eldest daughter, Paula, is attending a commercial school in the district and hopes to graduate shortly. Her second and third brothers are attending primary school.

Julie Sampson spends a lot of her time attending to a small kitchen garden and the ducks and chickens which she rears and sells. David calculates his average annual income is between $2,000 and $2,500.

---

acre of land to the landlord to grow enough rice for domestic consumption. Although not too many individuals in Ricetown rent land (see Table XVIIB) the relationship between landlord and tenant is very interesting. It is more like a patron/client relationship. The landlord can be assured that he can call on his tenant/client at the shortest possible time to do any work. On the other hand, the tenant knows that if his landlord/patron has the odd day's work he is automatically entitled to it.

Case 6

Richard Dookhie, an Indo resident 42 years old, and his wife, Basmattie, 36 years old, have been married for the past 19 years and have seven children. Richard's father died when he was 16 and his mother died two years later. With the exception of the two house lots which were given to his four sisters, Richard inherited a quarter share of land.

In 1965, because of debts incurred Richard sold three of his eight acres of riceland. Four years later he sold another two acres and finally in 1972 he sold the remaining three acres. During the crop season he finds employment working on combines, transporting paddy, and in rice mills. During the out-of-crop season he finds employment as a carpenter. He pointed out that because of the rising cost of living people (in and around Ricetown) are not building houses as they used to, as a result he sometimes goes to the city in search of jobs. Richard's eldest son, Prabhu, is 17 years old. After completing primary school three years ago, he quit. Like most young men his age, he finds part-time employment in the peak crop season but spends the rest of the year doing very little. He is thinking of joining the Guyana Defence Force (GDF), which his father disapproves of because of political reasons.

Banie, Richard's eldest daughter, is 14 years old and is attending high school. She won a government scholarship but because her parents cannot afford to send her to the city, she is forced to settle for a less reputable high school in the area. Despite the scholarship the Dookhies are finding it financially difficult to keep

Banie in high school because of daily transportation costs, books, proper clothes and shoes, and extra pocket money. With the exception of one pre-schooler all the rest of Richard's children are in primary school.

In her kitchen garden, Basmatie grows more vegetables than the family needs. The younger children sell the surplus to other villagers. Richard estimated his annual income to be approximately $2,500.

Case 7

Raymond Garib, an Indo resident 33 years old, and his wife Phoolmatie 31 years old, have been married for the past 12 years. Raymond is the eldest of six children. He was forced to quit school at the age of twelve to assist his father (who at the time owned eight acres) in the rice fields.

Three years after Raymond and Phoolmatie got married, Raymond's younger brother, Harold, got married, and Raymond moved "one-side" and established a *chula household.* After establishing his own household Raymond's father gave him one acre of riceland. He also rents one acre from one of his wealthier uncles. Besides the two acres of riceland which he cultivates, Raymond finds employment as a porter and also works in the rice mills drying paddy. These jobs, however, are not regular, and consequently Phoolmatie's budget planning becomes very difficult. They calculate that their annual income is about $1,100.

Both Raymond and Phoolmatie confided that it is their greatest wish to build a house of their own. So far they cannot afford this and neither of their parents is in a position to assist them. Since they established their household 9 years ago they have a bank savings of $675 but that is not enough to start building even a one-bedroom house.

There is a strained relationship between Phoolmatie and her mother-in-law and for months they would not speak to each other. Raymond and his brother Harold (who also has a chula household in the father's house) are not on speaking terms. Although there is a tense relationship among the different chula group households they do make joint efforts when necessary, e.g., fishing together or babysitting for each other. The different heads of the chula group agree that if they were living in separate dwelling units such tension would not have occurred and they would have lived more harmoniously.

Raymond is a member of one of the rice cooperatives and hopes that if, and when, the fields are drained and irrigated he will be able to build his house and live more independently. Raymond's father promised to give him half of a house lot as soon as he is ready to build his house.

Three of Raymond's children are in primary school; the fourth is in kindergarten. Raymond's eldest daughter, Leele, is 11 years old and is studying for the government's common entrance exam. If she succeeds she will be entitled to free high school education.

The above case studies revealed a number of interesting phenomena, such as property inheritance and social status, and the fissioning of the extended family. The most important point, however, is that there seems to be a consistency in the emphasis put upon education among all three status groups. The scope of this study does not permit a detailed analysis of the function of education in Ricetown--

or even the Guyanese society at large.* However, the enrolment in the high schools, and more recently in the commercial schools from the mid-1950's--after mechanization began--to the time of field work, increased tenfold. In short, we can say that the wealthier families *invest* their money in their children's education not only because it provides a vehicle for social mobility or provides them with more promising ventures and more security, but it also seems to provide *returns*--in the form of remittance.

---

*The emphasis on education (regardless of the quality or the ideological orientation) in Ricetown and throughout rural Guyana cannot be overstated. This is particularly true since during the course of field work the government announced that all education--from kindergarten to university--would be free. Poor families (like the Dookhies) see it as the only hope for their children to escape the vicious cycle of poverty, since there is little hope of finding any jobs in or around Ricetown.

CHAPTER VII

HISTORICAL CONTEXT OF RICE PRODUCTION IN RICETOWN

A. INTRODUCTION

In this chapter I will describe the historical changes in the tools and techniques involved in rice production in Ricetown. The discussion will also focus on the accompanying changes that took place in the social relations of production. Following the introduction of rice to Guyana the tools and techniques have undergone significant changes. However, it was only after the demand for Guyanese rice was felt in Caribbean markets that massive importation of mechanical equipment took place. This massive technological input must be understood within the economic, political and organizational constraints as discussed in Chapter IV.

Following this introduction and a discussion of the technological background of the industry, the rest of this chapter will deal with an analysis of the tools and social relations of production, from the preparation of land, through planting or sowing, cultivation, reaping, transportation, drying and milling of paddy, during the pre-mechanized period of rice production. Rice production in Ricetown is divided into three periods. This chapter focuses on the first two periods. The third period will be discussed in Chapter VIII.

B. RICE CALENDAR

Rice growing in Guyana and throughout the world has been a seasonal activity. That is, the crop is sown during the rainy season and reaped during the dry season. With the advent of modern techniques--drainage and irrigation and temperature-controlled silos--the weather is not the determining factor for rice production today. The seasonal changes in Guyana as discussed in Chapter II fit with the seasonal patterns of production. The long and short wet seasons are ideal for sowing and the long and short dry seasons are ideal for reaping.

During the first and second periods farmers grow one crop. There are two factors which could explain why it was not possible to grow two crops. First, the traditionally grown seeds--D110 and D79--take from one hundred and sixty to one hundred and eighty days to mature as opposed to the other varieties, such as Starbonnet, which takes from ninety to one hundred and twelve days. Secondly, land preparation and transplanting of seedlings are time-consuming (compare Tables XXIII and XXIV in Chapter VIII). With the advent of mechanization and the introduction of new seed varieties--shorter growing periods--and new techniques such as broadcasting, double-cropping became possible.

Hoeing and ploughing during the first and second periods began with the rain in April. Farmers first begin by preparing nurseries and growing of seedlings. While the seedlings grow the fields are prepared. Table XXIII shows the different activity--from preparation of land to milling--involved and the number of work days required to produce one acre of rice during the first and second period. It also

FIGURE 10

SEASONAL ACTIVITY OF RICE PRODUCTION IN RICETOWN
DURING THE FIRST AND SECOND PERIOD

Activity	J	F	M	A	M	J	J	A	S	O	N	D
Land preparation and sowing				X	X	X	X					
Cultivation							X	X	X			
Reaping									X	X	X	
Processing	X	X	X									X

Note: The seasonal activity (sowing in the rainy season and reaping during the dry season) corresponds with the seasonal changes (see Figure 1).

Source: Data collected 1974.

TABLE XXIII

AVERAGE NUMBER OF WORK DAYS AND TOOLS INVOLVED IN PRODUCING ONE ACRE OF RICE IN RICETOWN DURING THE FIRST AND SECOND PERIODS

	PERIOD I		PERIOD II	
Activity	Tools	No. of days labour	Tools	No. of days labour
Preparation	cutlass, hoe, shovel & fork	14	cow & plough, chipper-board, rake & henga	8
Sowing	--	8	--	8
Cultivation	--	8	--	8
Reaping	sickle	8	sickle	6
Hauling	--	6	dragga	1
Threshing	--	6	pitch-fork	1
Transportation	donkey-cart	2	cow-cart, boat & punt	1
Drying	--	8	raker, scraper & gangaram	4
Milling	mortar & pestle	14	single-stage mill	1
TOTAL		74		38

Source: Data collected 1974.

shows the different types of tools used.

Sugar, as mentioned earlier, is the only other major industry in the area and the peak rice-reaping period overlaps with sugarcane harvesting. This overlapping, however, is not of any significance in Ricetown or in any of the neighboruing vilalges since the few workers from the area who work on the sugar estate at Skeldon grow very little rice or none at all. The major problem arising from the demand for labour (as noted by most informants--both parents and schoolteachers), in the pre-mechanized period was that absenteeism in the schools, both primary and secondary, was very high. It is worth noting that during the first period there were no schools in the area and children spent most of their time with their parents in the fields. With the use of animals in the second period boys began spending most of their time grazing animals, while the girls stayed home babysitting younger brothers and sisters while their mother went out transplanting seedlings or assisting with other minor chores in the fields. With the advent of mechanization children's labour in rice production has been completely eliminated.

C. THE TECHNICAL CONTEXT OF RICE PRODUCTION

There is little documented evidence about the types of tooks used during the earliest period of rice production. Further, no mention of tools involved in production was made either by Strom van s'Gravesande (see Harris and DeVilliers 1911) or Schomburgh (1840) in their discussion of the introduction of rice to Guyana. We can only assume that the runaway slaves who grew rice in ther hiding places must have taken with them the tools that were used in plantation production, e.g., cutlasses, hoes, shovels and forks.

Although rice has been grown in Guyana since the early eighteenth century, serious attention was not given to production until the late 1880's and early 1890's when encouragement was provided by the abandonment of sugar estates in Essequibo. The use of estate lands for the purpose of rice production was facilitated by the fact that estate lands were drained and irrigated. In 1933 Codd and Peterkin noted that:

> Encouragement was given to the industry in Essequibo in 1886 when over 20 acres of the Anna Regina sugar estate was leased to East Indian and Chinese labourers for the cultivation of rice. The success of this venture . . . was almost entirely due to the irrigation and drainage facilities placed at the disposal of the farmers by the estate officials (cited in Ramgopaul 1964:6).

This meant, of course, that in addition to irrigated lands early production depended entirely upon:

1. the knowledge that labourers had either brought with them;
2. techniques and tools that were available from the other form of productive activity and with which labourers had some experience, e.g., sugar plantations;
3. the tools developed and perfected by ex-slaves (creoles) in their free villages after emancipation.

Both knowledge and tools, during the initial stage of production, were of a very rudimentary nature. A further difficulty stemmed from the fact that the development of "rice technology" involved the modification of tools used in the sugar industry to meet the needs and demands of a very different productive process.

The history of rice technology in Guyana can be divided into three periods (see Tables XXIII and XXIV). The significance of this periodization lies in the fact that the *distinctions in the instruments of labour are important indicators not only of the mode of production but also of the level of social development. The first is the period between the 1860's and about 1910; the second between 1910 and mid-1950's* when the cow and plough technology became dominant throughout the entire industry; and finally, the *third or contemporary* period which will be discussed in Chapter VIII. It must be noted, however, that these divisions are not meant to be rigid categorizations since forms of production tend to overlap.

Because of the crude tools involved in the first period an enormous amount of labour was required to produce and process one acre of rice. As a result we find that as much as 74 man days and 88 female days were required to produce one acre of rice.* The interesting point about the first period is the high number of work days performed by children in the rice fields. During this period children's work days were generally referred to as "help," that is, in addition to the 74 days required to produce one acre of rice. Interestingly, during the second period children's labour (especially the grazing of animals) was not seen as "help" but as a necessary part of production. By the third period, children's labour was completely eliminated (for further discussion see Chapter VIII).

---

*The date for the first period was tabulated after long discussion with old peasants in Ricetown and other villages in the Upper Corentyne area. The lack of historical data on the tools and techniques involved in rice production inhibits any cross checking on the validity of the data. The method I employ is to compare the information from one individual and/or village with another.

Land preparation in the first period was dominated by the use of hoes. The wooden plough was introduced by the end of the first period and was quickly replaced by the American steel plough. The effects of the plough plus animal power reduced the total number of man's work days some fifty percent. (See Table XXIII and compare periods I and II.) By the end of the second period mechanization began changing the techniques as well as the social relations of production (see Chapter VIII).

The first period, that of non-mechanized production, is marked primarily by the use of hand tools in land preparation, harvesting and the processing of the paddy into edible rice.* These tools have their origins in the sugar industry and in the limited production of "free Negro villages" (discussed in Chapter II). During the planting season tools used consisted of the fork, shovel, hoe and cutlass. The fork and shovel were used in the digging and maintenance of drainage and irrigation systems; and the construction of dams and ditches to maintain adequate supplies of water during the planting and growing seasons. The hoe was the primary tool for both the overturning and harrowing of the soil. Besides weeding, the cutlass was used to clear ditches and canals to allow for the free flow of water and to clean fields of all weeds before planting.

Although mechanization in land preparation was not introduced until the early 1940's, mechanization in the processing sector was introduced during the 1890's.

D. LAND PREPARATION AND SOWING

The sowing season in the pre-mechanized periods began with the preparation of the nursery beds and the sowing of seedlings by April. A nursery bed about thirty-six feet square, sown with sixty pounds of pre-germinated seeds, would produce enough seedlings to transplant one acre. After the seeds were sown, proper care and attention was required. Water levels in the nurseries needed to be kept to the minimum so that the seedlings would develop strong roots, and marauding birds had to be prevented from destroying the seeds.

Seedlings are ready to be transplanted by the time they are six to seven weeks old. This means that farmers had to be able to complete land preparation within this time. Land preparation during the first historical period and part of the early part of the second period was by the use of the hoe. In some areas other than Ricetown, such as the Lower Corentyne Coast, the hoe remained the major tool in land preparation until the early 1950's when it was replaced by the tractor.* The fields were flooded (prior to drainage and irrigation farmers depended solely on rainfall) so that the soil would be soft and easy to upturn. In almost every case the fields had to be hoed twice before a proper hardpan could be created to facilitate transplanting. Although useful, the hoe had its limitations, especially in virgin soils and it sometimes took up to 14 days to hoe one acre of riceland.

---

*From discussion with old sugarcane workers in the Lower Corentyne area, it seems that the main reason why "cow and plough" technology never became a dominant means of land preparation is that, first the landholdings were too small and many could not afford a pair of cattle. Secondly, most of the land in the area (from Seawell Turn to Whim) was directly controlled by the two sugar estates--Albion and Port Mourant--and one individual, Dr. Higgins. Thus, residents in the area did not have easy access to land for either grazing or keeping their cattle.

By the end of the first historical period, the wooden plough and draught animals had been introduced to the colonies by the Spanish settlers (the cattle industry in the savannas is dominated by the Spanish Longhorns to this day). Later cattle were bred and raised by the British for the sugar industry. The superiority of cattle over horses and mules lay in the fact that they were not averse to working in mud and water. This made them ideal draught animals for wet-rice agriculture.

Unlike the Philippines and some other areas in Southeast Asia where one animal is used to pull a plough (see Kishinda 1971), in Guyana, a pair of animals was used. They were yoked together by means of a wooden collar, with wooden pins or "silas" which went around the necks. The shaft of the plough was clamped or tied to the collar thus distributing the weight evenly between both animals.

Most older informants in Ricetown indicated that the steel or iron plough was first introduced to the area about 1910. This had two immediate effects. First, the steel blade was much more efficient in overturning the soil for puddling, thus transplanting was made much easier. Secondly, farmers no longer had to cope with the constant breakage of the wooden plough. Many informants indicated that, at first, the iron tip of the plough might either bend or break. With the help of local blacksmiths, farmers reinforced the upper tip of the plough and streamlined it to provide better harrowing. Only the share or blade of the plough was made of iron; the rest of the frame was made of local wood, and clamped on to the share.

It is interesting to note that every farmer in Ricetown by the latter part of the second period--from the end of the Second World War to the mid-1950's--owned a pair of oxen and implements, especially the plough, necessary for land preparation. The ownership of tools in the second period is in sharp contrast with the contemporary period (see Chapter VIII) where tools, e.g., tractors, combines and trucks, are owned by a few wealthy farmers and are rented to the poorer farmers.

In further preparing the field for transplanting the "chipper board" was introduced for harrowing. The "chipper board" in the pre-mechanized period was drawn by a pair of oxen or bullocks and was identical with the ones used today. But today the chipper board is controlled by hydraulics, under the cow and plough system a shaft about twelve feet long was attached to the board with someone standing on the board to provide weight. Chipping was followed by "henga" or levelling. The henga was made from a piece of wood cut locally and tied to both sides of the collar with a rope or a vine. After the field was levelled the few grasses that remained standing were chopped and the fields were ready to be planted.

Seedlings had first to be uprooted and tied in little bundles (sometimes called atya) as this facilitates transportation. The uprooting of seedlings was done exclusively by men in one day. A man could uproot enough seedlings to transplant half an acre. In most cases farmers had their nurseries on the fields as this facilitated transportation from the nursery to the field. Children, more often than not, were involved in transporting seedlings from the nurseries to where they were needed for transplanting.

Men seldom exchanged labour for land preparation, but during the planting season they did exchange labour when uprooting seedlings. The main reason for exchange of labour involved in the uprooting of seedlings is that these uprooted seedlings must be transplanted within two days. It is interesting to note that in families where there are more women than men, it is not unusual to find that two women would exchange their day's labour for one man's day labour.

Transplanting of seedlings, or "planting rice" as it is popularly known, was done primarily by women and very few, if any, men were directly involved in this. The onus of arranging hands--exchange labour or wage labour depending on the status of the family--was on the women. They usually searched out their neighbours, friends and relatives, but were sometimes forced to go to other villages to search for additional hands. It was not unusual to see as many as forty women in a single field transplanting seedlings. It took a woman about eight days to transplant one acre; thus, if she had six working weeks, at most she could transplant about five acres. This was one of the major reasons why wealthy farmers could not expand production at this stage, and had to await the introduction of broadcasting methods.

Rice planting is a very difficult task. In Ricetown it involved working seven hours per day in mud and water, bending continuously. Women passed the day by singing religious songs, telling stories and gossip ("talking mattie story").

Besides the economics of exchange labour in rice planting, there were also social obligations. "Making hand" creates mutual obligations and these obligations or relationships went beyond the rice fields into other out-of-crop activities, such as babysitting, exchanging vegetables and fish, borrowing and lending money, etc. A number of old female informants lament about "long ago," when during rice planting and cutting, they used to see their friends regularly. Today, with the decline in exchange labour among females, the mutual obligations or dependencies do not exist and women do not see much of their friends beyond those in their immediate neighbourhoods. They now meet only on social occasions such as weddings, religious ceremonies and funerals.

E. RICE CULTIVATION

The four important factors--water control, control of insects and weeds, and the proper use of fertilizer--involved in rice cultivation today in Ricetown (see Chapter VIII, section D) were not always equally important. Rice cultivation in the pre-mechanized periods had far fewer problems than in the mechanized periods. The factors most responsible for this are, first, that intensive animal and human labour during land preparation impeded the growth of weeds after the seedlings were transplanted. If, however, weeds did grow, because of the smaller acreage cultivated, the weeds could be pulled out. Second, the traditional (C110 and D79) rice varieties were resistant to insects and pests. The only insect to which attention was given was the paddy bug (gandhi) which attacked the plants during its flowering stage (discussed in Chapter VIII).

The major problem faced by farmers during the first and second historical periods was the lack of drainage and irrigation facilities. Farmers depended almost entirely on the weather--rain in the sowing season and sun in the reaping season--for a good crop. It was only after World War II and the expansion of drainage and irrigation that the major problem was eliminated.

During the pre-mechanized period, farmers grew single and not double crops. After reaping their crops, farmers did not burn the rice straw but left it to be grazed by cattle. The straw which was not grazed was trampled and soon rotted. The rotten straw combined with animal waste provided fertilizer for the field. No farmers in Ricetown or any of the neighbouring villages remember seeing anyone using fertilizer prior to the late 1950's when double-cropping became widespread.

F. REAPING AND THRESHING

During the first and second historical periods, most paddy in Guyana was reaped by hand with the use of a sickle or "grass knife." The paddy-laden stalks were first cut about twelve to sixteen inches from the grains and were left to wither for a day before being bundled and taken to the threshing floor or "kharyan." All through the first historical period and part of the second period threshing floors were not used since paddy was hand-threshed, that is, by hitting the paddy-laden stalks against a screen table (made out of wood) in order to free the grains from the stalk. As production expanded and new tools and animal power were introduced bundles were taken to the threshing floor by a sledge or "dragga." A dragga was made of local wood; two curved "crooks" served as the base on which the dragga moved, two cross-bars were used to hold the crooks together at the same time ensuring durability, while strips of boards or wood were used as "floor." At first, the dragga was pulled by oxen but by the early 1950's the ox-drawn dragga was replaced by a tractor-drawn dragga. This had one distinct advantage; farmers no longer had to pull their bundles, pack them and later thresh them--all of this was done in one day. Because of the problems of sweeping the grains from the dirt threshing floor, the "kharyan bag" was developed. This was made from between 100 and 120 jute bags sewn together and was placed in a clear patch of ground where the bundled rice was to be threshed. This eliminated the necessity of hauling the bundles to either end of the field prior to mashing, a process which, depending on the size of the acreage, might take several days. This process of "haul and mash" on the same day not only resulted in further economy of labour but had the added advantage of preventing spillage and loss of grains through bad weather.

During the early stages of harvesting, men and women were involved in reaping to an equal degree. However, at later stages, men moved to more physically strenuous jobs, such as transporting bundles from field to the threshing floor, threshing and transporting paddy. There are no biological reasons why women could not have done any of the above-mentioned jobs; however, they were culturally tabooed (women to this day do not carry paddy bags). A man would have been socially humiliated if he allowed his mother, sister or wife to do a man's work. Because of the strict division of labour which existed in the industry, women, during the reaping season, exchanged labour primarily for reaping paddy, while men exchanged labour for threshing and transporting paddy.

A man with two pairs of oxen and a child helper could thresh about half an acre (or about ten bags) of paddy in one day. It is important to note, however, that men seldom threshed paddy individually and at times up to ten men were seen working on one threshing floor.

Bundles were thrown into the trampling floor and the oxen trampled over them until the grains were separated from the stalk. With the help of a pitchfork (pitchforks are imported and not locally made), men shook the straw to separate the grains from the stalk. New bundles were added and the cycle continued until the process was completed. The paddy was then placed in bags ready to be transported.

On days when paddy was threshed, children (both boys and girls) were very active. Their primary and very important task was to "drive steer." Bullocks (or steers) were yoked together in sets of four--usually two sets trampling on the same threshing floor one behind the other--tied to a centre or kharyan post. The animals were yoked in such a way that they walked in a circle all day. Children made sure that the animals did not stop to eat the grains. To do so, they had to walk behind the animals all day. Sometimes a seat was made on top of the kharyan post where a boy (girls were never allowed to sit on top of kharyan posts) would sit with a whip driving steer all day. The children's task of driving steer disappeared after tractors replaced animals.

G. TRANSPORTATION AND STORAGE

Transportation of paddy in Ricetown during the earliest years of rice production was accomplished by means of a donkey-drawn cart.* Donkey-drawn carts were not only very slow but at best would carry about six bags of paddy per load. With the introduction of oxen to the industry, the donkey cart was replaced by "cow carts." The change from donkey to cow carts meant that about three times more paddy could be transported in one load, while at the same time the pace was accelerated. The expansion of land holdings in the Block III area in the 1940's and the large-scale introduction of drainage and irrigation caused a new type of transportation technology to be introduced into the rice industry. At first, boats, and later old, condemned cane punts from the Skeldon sugar estate, were used in the main irrigation canal (middle walk trench). The paddy bags were loaded in the boats and/or punts, then pulled by pairs of oxen to the "middle walk head" where loads were discharged. From the middle walk head the paddy bags were loaded on a cow cart then taken either to the factory or to individually owned rice barns or "khutilla." Cow carts were later replaced by tractor-drawn trailers, and then, in part by trucks.

The poorer farmers in the 1940's suffered the same problems associated with paddy storage as do poorer farmers today (see Chapter VIII). All the wealthier farmers in Ricetown, up to the mid-1950's, had their own rice barns (about twelve cubic feet) for storing their paddy. By providing their own storage facilities wealthier farmers asserted both their social and economic independence. Because of this independence, wealthier farmers could take their paddy to a mill of their convenience. Secondly, rice millers made (and still) still make) concessions to wealthier farmers by offering "first soaking" (preference for processing paddy early). Finally, by storing paddy in individually owned barns, the paddy could be stored loose (not in bags), which was economically advantageous since the paddy bags could be used for several years longer than otherwise.

---

*Until the 1940's the donkey cart was not only important in the rice industry but was also the most important means of human transportation. It was also the only means of transporting water (in drums) during the dry season and also firewood. Almost every household owned a donkey and cart.

To stimulate critical discussion with a group of old peasants in Ricetown, I once raised the question of advantages and disadvantages between the pre-mechanized and the mechanized periods. I pointed at the amount of time paddy had to be handled in the pre-mechanized period before it reached the final stages of processing as opposed to today, when, in a matter of forty-eight or seventy-two hours, the paddy could be reaped, dried, milled and taken to the Rice Board. In a very precise manner an old but wealthy peasant summarized the differences between the two periods. Directing his remarks to me, he said:

> Let me ask you something--are the people any better off today than they were thirty or thirty-five years ago? It is true that they may have more cars, trucks, tractors, radios and bicycles, but what happens to most people in this village after they finish paying the combine, mill and truck owners? They are left with very little. In our time we never had to hurry; we used to plant one crop and we had all year to do it. It is true that at the end of the year we were lucky if we could have saved fifty dollars as compared to a thousand or two thousand today. But look at it this way, in our time at the end of two years' savings we could have had enough to buy a quarter-share land. Today it will take them ten years to save enough to buy a quarter-share land--besides, who knows what will happen in ten years' time?

H. PROCESSING

Paddy cut by hand did not require drying before storing. This is due primarily to the slow pace between cutting, bundling, hauling, and threshing, since by the time the paddy was ready to be bagged it had lost most of its moisture content. As a result, paddy cut by hand could be stored for a reasonably long time as contrasted with paddy harvested today by combines.

Prior to the introduction of mechanical hullers, the shells of the paddy were removed by one of two methods, of being pounded in a mortar with a pestle, locally known as "okhree and moosar," or in a "dhekney." The same okhree and moosar was later used to pound the rice into rice flour. It is interesting to note that the okhree and moosar is still being used by the Amerindians in the Orealla district on the Corentyne River and among the Djukas in the Brokopondo area in Surinam (see Figure 11).

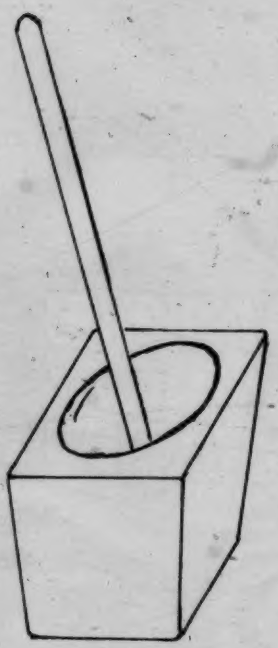
The introduction of mechanical (single stage) hullers in the 1880's was the first revolutionary step towards improving both the quality and the quantity of rice produced.* However, before milling, the paddy must first be soaked in large concrete tanks (later old cane punts were used) for about forty-eight hours before it was transferred to a forty-eight gallon wooden barrel. A steaming pipe about four feet long is inserted into the barrel. The steam is produced by a boiler fed primarily by rice husk. After steaming for about five minutes, the paddy is thrown on a concrete floor where it takes about twenty hours

---

*A single stage mill can process about 50 bags of rice in a day. They are still in use today. For further discussion on different types of processing see Chapter VIII, section G.

FIGURE 11

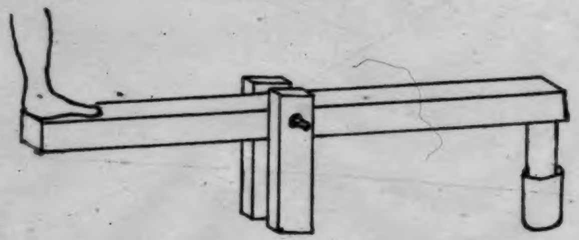
EARLY TOOLS INVOLVED IN PROCESSING



MORTAR AND PESTLE

OR
OKHREE AND MOOSAR

SCALE 1:12



DHEKNEY

SCALE 1 : 24

of sunshine (about 2-3 days) before it is ready for processing.

The significance of the introduction of mechanical hullers is that millers began to take control, not only over processing but also over marketing. As discussed in Chapter III, many of these millers were agents and subagents (e.g., Ramjohn and Tulsie from the Upper Corentyne area) for the West Indian markets. During most of the second period millers virtually controlled all transaction involving cash. After the paddy was milled or processed into rice, the millers carried out sales transactions and after discounting expenses, passed on the remainder of the sale price to the farmer.* During the early 1950's this system was changed and currently, before the rice is shipped to the Marketing Board the miller makes out an "Expense Form" which must be signed by the farmer.

The first and second historical periods were those in which engines were introduced to produce parboiled rice. At first, after the paddy was dried (see Chapter VIII, section G), it was taken near the huller where it was placed in buckets, then handed to someone sitting on a high stool who would throw the paddy into the huller. This method was later considered inefficient and a platform or stage was built over the huller. An average platform could accommodate about two hundred and fifty bags of paddy. The manual task involved in processing became much simpler, as paddy bags were emptied and a child could "feed the huller." There was very little or no exchange labour involved in rice processing, as a man and a child could provide enough labour. Women were usually around sweeping up spilled paddy and rice, and collecting paddy husks ("bhoosie") for chicken feed.

---

*It is important to note that up to the end of the 1950's most millers also owned grocery stores, dry goods stores and rum shops. Most poor farmers try to establish good relations with miller/grocery owner, so that they could obtain credit throughout the year and pay after reaping their crop. The miller never had problems collecting his debts since he controlled the cash. A survey in the entire Upper Corentyne revealed that in the mid-1950's over 90 percent of the millers also owned a grocery and/or rum shop. As a teenager, I remembered several occasions where poor farmers accused millers/store owners of "cooking the book," which resulted in loud, noisy arguments. However, social and economic conditions usually force poor farmers to return to the same miller/grocery owner for credit (for further discussion on the contemporary period see Chapter VIII).

I. A PRE-MECHANIZED WORK DAY

A man, during the sowing season, would get up about four in the morning, go to the rice field (about two to four miles from home), yoke his oxen and start working. His breakfast (tea) arrived between seven and eight. After breakfast he worked until noon. If he had a second pair of oxen, he would let the first pair go out and graze (grazing the oxen was the job of his son or a younger brother). He would work the second pair until three or four in the afternoon. He would then let both pairs graze for an hour before he would tie them up and return home for the evening. This was a daily routine until the seedlings were transplanted.

A woman would, like her husband, get up about four in the morning (accompanied by her daughter, mother-in-law, or sister-in-law), and had usually finished preparing breakfast and lunch by seven. She had to send her husband's breakfast and lunch to him in the field, then she would join her friends in the field where she would work all day. If the children in the family were not old enough to assist with cooking she would have to start preparing supper as soon as she returned from the field in the late afternoon, at the same time preparing the younger children for supper and bed. Men usually arrived home between five and seven in the evening depending on how far their fields were from home. During the early reaping seasons, men and women left home together--about seven in the morning. However, on the day of threshing or "mashing," men usually left home between three and four in the morning, while women were left behind to prepare and carry breakfast and lunch to the fields. On the day of mashing men returned home about eight or nine in the evening after the paddy was bagged and packed, awaiting transportation. On days when the paddy was threshed, children--both boys and girls--performed the major task of driving steer. They were expected to walk behind the animals all day while they separated the grains from the straw.

J. SUMMARY

In this chapter, I tried to provide some general background information on the historical changes in the tools and techniques, as well as aspects of social relations of rice production in Ricetown. The interesting point is that rice became important in Guyana's domestic economy during the 1880's and exportation began in the first decade of the twentieth century, yet it was not until the beginning of the Second World War that there was an input of mechanical equipment in the production sector of the rice industry. Guyana's rice industry was developed to meet the needs of both the growing domestic and West Indian markets. But, the innovation and use of tools, the availability of land, the organization of labour and the slow rate of accumulation of capital for further expansion were all factors responsible for the slow rate of development, especially during the first and second periods. The technical changes which occurred in the third period triggered off changes in other institutions in the area.

CHAPTER VIII

CONTEMPORARY RICE PRODUCTION

A. INTRODUCTION

In this chapter I will discuss the technology in use today and the social relations of rice production in Ricetown. The discussion is focussed on the third period (see Table XXIV) or the contemporary period which is the post mid-1950's. The chapter begins with a discussion of the calendar of rice production, which basically examines the peak labour periods in rice production and inquires whether or not the rice industry competes with other industries for labour. This discussion will follow, in order, the steps involved in land preparation, sowing, cultivation, reaping, transportation, drying and milling of paddy.

B. CONTEMPORARY RICE CALENDAR

With the introduction of new tools, techniques, and seed varieties, by the end of the second period it became possible to produce two rice crops in one year. As a result of double-cropping we saw changes in the seasonal activities (compare Figures 10 and 12). The use of machinery reduces the length of both the sowing and the reaping season, which also results in a significant displacement of labour from direct production. Comparing Tables XXIII and XXIV, we can see that the number of man-days required to produce one acre of rice, between periods

FIGURE 12

SEASONAL ACTIVITY OF RICE PRODUCTION IN RICETOWN
DURING THE THIRD PERIOD

Activity	J	F	M	A	M	J	J	A	S	O	N	D
Land preparation and sowing			X	X						X	X	
Cultivation	X	X			X	X	X					X
Reaping			X	X				X	X			
Processing	X	X				X	X					X

Source: Data collected 1974.

TABLE XXIV

AVERAGE WORK DAYS AND TOOLS INVOLVED IN PRODUCING ONE ACRE OF RICE IN RICETOWN DURING THE THIRD PERIOD

Activity	Tools	No. of days labour
Preparation	Tractors, chipperboard, rake, henga	-
Sowing	--	½
Cultivation	Spray cans & motor blowers	3
Reaping	Mechanical threshers	½
Transportation	Tractors/trailers & trucks	½
Drying	Raker, scraper & gangaram	½
Milling	Multi-stage mills	½
Transportation to Rice Board	Trucks	½
TOTAL		6

two and three, was reduced from 34 to 14. Dumont (1963) in his study in Black Bush Polder noted that a farmer with 15 acres spends 38 days in the rice fields.*

Preparations for sowing the autumn, or the "big crop," begin in March and continue for about two months. Thus, by the end of April or early June the sowing period is over. The poorer farmers who do not own or have direct access to tractors must wait until the wealthier farmers finish preparing their plots before they can rent tractors to prepare their own plots. Late preparation of plots and sowing of seeds eventually lead to other problems: late reaping, late drying, bad weather, late milling and, as a result, later access to cash.

The reaping of the big crop begins in early August and finishes by the end of September or early October. As soon as reaping is over farmers set the rice straw afire and begin ploughing for the spring or "second crop." Ploughing and land preparation for the spring or second crop begins in early November and lasts for about six weeks. This coincides with the short rainy season. Reaping of the spring crop begins in late February and lasts for about six weeks.

The wealthier farmers are usually the first to start ploughing and land preparation. Wealthy farmers are usually in a hurry to burn the rice straw and start ploughing for the next crop. During the course of field work four situations were observed in which fields that were set on fire burnt out of control and destroyed about ten acres of paddy belonging to poorer farmers. In all four cases the wealthy farmers offered compensation which was accepted. Interestingly, the police were not informed of any of these incidents.

---

*There are two reasons why there is a difference between my data and Dumont's. First, re-checking in the Black Bush Polder area I found that Dumont has underestimated the amount of days required to produce one acre of rice. Second, between 1963 and 1974 higher levels of technological innovation and new techniques of processing have led to further displacement of labour.

C. LAND PREPARATION AND SOWING

Within the last decade the transplanting of seedlings was completely replaced by broadcasting. There are two types of broadcasting, each requiring a different type of tillage (primary and secondary tillage), or land preparation. The first type of broadcasting is the sowing of dry seeds or "jarai." Land preparation for dry seeding is much simpler and easier than land preparation for pre-germinated seeds both in terms of human labour and machine use. Land preparation for pre-germinated seeds involves a higher rate of machine depreciation, consumes about 50 percent more fuel, and as a result increases the cost of production. Further, tractors are not as mobile in preparing land for pre-germinated seeds as contrasted with preparing land for dry seeding. Individuals would expend a lot more energy and time in preparing land for pre-germinated seeds than the amount of time and labour involved in individuals with tractors preparing land for sowing dry seeds.

Dry Seeding

In preparing land for dry seeding, the land is ploughed in the dry season (if the ground is too hard a disc or "harahie" plough is used). This first ploughing is referred to as "first cut." After the first cut the field is left to weather or bake in the sun for about a week before it is given a "second cut." This is followed by another week or two of weathering before it is given the "third cut" when the seeds are sown. In the second and third ploughings a mold-board plough is used instead of the disc plough since it tends to loosen the soil and increases permeability of both water and roots and facilitates proper distribution of organic matter. In broadcasting dry seeds a farmer could broadcast as much as eight acres in one day. Broadcasting of pre-germinated seeds is more tiring and time-consuming, and one person can broadcast no more than five to six acres. Broadcasting is done primarily by men and very few women participate directly.

When dry seeds are sown there are two ways to facilitate growth. The first and more common is simply waiting for the first rain. Second, if the farmer has proper "meheree" or bund* the field can be flooded with 4-6 inches of water for about three or four days before it is drained, thus facilitating immediate germination.

Pre-germinated Seeds

The second and more popular method of broadcasting used today is the sowing of pre-germinated seeds. The sowing of pre-germinated seeds requires secondary tillage. Although secondary tillage involves greater cost, e.g., depreciation of machinery and labour costs, it has certain distinct advantages. However, before discussing these advantages, I will discuss the methods used in land preparation, the tools involved and the process of preparing germinating seeds.

---

*A meheree is a little dirt dam used for controlling the spread of water into the neighbour's fields.

In preparing land for pre-germinated seeding, the land is ploughed twice, as in the case of dry seeding, then it is flooded either by rainfall or irrigation before it is chipped, raked and levelled by "henga" before the seeds are sown.

The chipper board is made locally from a board approximately ten feet long, fourteen inches wide and two inches thick, with about twenty old cutlasses attached to it. The rake is also locally made, with a board about the size of a chipper board but instead of cutlasses, eight-inch spike nails or hard wood are substituted. The "henga" or levelling wood is a piece of local wood about fourteen feet by ten inches by ten inches. The plough, chipper board, and rake are attached directly to the hydraulic of the tractor and allow for ease of manoeuvering while the henga is attached to the draw bar with either a rope or a chain.

Preparing pre-germinated seeds for broadcasting is a very tedious task. A poor farmer who does not have proper (pure-line, high-yielding) seed paddy would exchange paddy with a friend, a neighbour or relative. The wealthier farmers in Ricetown purchase seed paddy directly from the Agriculture Station, and discourage exchanging paddy with poorer farmers. There are several known cases where wealthier farmers refuse to exchange seed paddy with poorer relatives. About ninety pounds of seed paddy is required to sow one acre. In order to make certain that ninety percent of the seeds will grow, before sowing farmers try to germinate about a pound to make certain that the seeds will grow. The seed paddy is then placed in a bag and soaked either in a pond or a tank for about forty-eight hours, after which it is pulled out of the water but left in the bag for another thirty-six hours. The paddy is then emptied from the bag and spread--mostly in the kitchen or under the house--about four inches thick and covered tightly with old paddy bags in order to generate heat, which accelerates the germination process. Water is sprinkled on it every eight hours, and after about forty-eight hours the germinated seeds are ready to be sown.

As mentioned earlier, land preparation or secondary tillage for sowing pre-germinated seeds has certain advantages and disadvantages. The disadvantages include higher level of depreciation of machinery which increases the cost of land preparation, increased consumption of fuel, and a slightly higher demand for labour. On the other hand, there are certain distinct advantages. Madramootoo (1971c:65) lists five advantages associated with secondary tillage:

1. helps create a hard pan and appropriate chemical, physical and bacterial conditions,
2. distributes and incorporates organic matter into the lower zone of the puddle,
3. promotes germination of seed and destruction of weed seeds,
4. facilitates introduction and distribution of fertilizers,
5. creates conditions favourable for seed germination or establishment of seedlings.

However, as pointed out earlier, these advantages are costly and only the wealthy farmers can take advantage because of the initial capital input required.

In terms of productivity, fields prepared for the sowing of pre-germinated seeds yield approximately three bags per acre more than fields prepared for sowing dry seeding. Another advantage of secondary tillage is that it destroys weeds thus saving both money and labour for weedicides.

D. CULTIVATION

Rice cultivation in Ricetown involves four important activities: (1) maintaining efficient water control; (2) control of insects and pests; (3) control of weeds; and (4) the proper use of fertilizer. I will discuss briefly these four activities involved in cultivation. The most critical stage of rice growth is during the first week after germination begins. During the first three weeks a minimum amount of water (2-3 inches) is required. At the same time the field should not be kept dry, as dryness would facilitate the growth of weeds.

Water

As discussed in Chapter III, rice is an aquatic plant and needs water throughout its growth. Further adequate water reduces the growth of weeds. As the rice plant grows the water in the field is increased up to a maximum of 16-20 inches. Once the plants are over six weeks old visits to the fields are less frequent (about once a week), and farmers usually ask a friend or a relative to check the water level, take water in or let it out (see Figure 4, Chapter IV). About a month before harvesting the water is drained. Drying the field has two effects. First, it hastens ripening of the paddy and, secondly, it allows easy mechanical reaping by self-propelled combines.

Fertilizers

The first application of fertilizer (Tripple Superphosphate) is made when the plants are about two weeks old. (For the cost of fertilizers see Table XV, Chapter IV.) When the plants are about six weeks old the second application of fertilizer (Urea) is made. If the plants show signs of unhealthy growth by the time they are eight weeks old a third application of fertilizer (Urea) is made. A fourth and final application of fertilizer is made when the plants are flowering--about ten weeks old.

Throwing, or broadcasting fertilizer on the field involves the same sort of labour as broadcasting of paddy, and the social relationships are the same; the wealthy and middle farmers employ wage labour and/or exchange labour, while most poor farmers "help" each other.*

Weeds

A variety of weeds grow in the rice fields. They are too numerous to mention. However, the most common and dangerous weed is maurina grass. Maurina is not easily recognized as it is of the same genetic species as, and resembles, the rice plant. It also matures early and as a result can stultify the growth of rice plants. The most effective method to prevent the growth of maurina is to prepare the field properly and sow pre-germinated seeds. The most effective way to destroy maurina is to dry the field before spraying it with weedicide (Stam F 34).

---

*Helping is not exchange labour. Exchange labour means that an individual who owes a hand must reciprocate with similar day's work. In cases of help one does not have to reciprocate, neither will he be called upon to do so. In turn he must offer his help voluntarily. The difference between help and making hand seems more like the distinction Sahlins (1968:82-83) made between generalized reciprocity and balanced reciprocity. The main reason why poorer farmers became involved in helping is that they have more spare time.

In terms of labour, spraying insecticide and weedicide is less demanding than broadcasting of seeds or throwing of fertilizers. One individual can spray (insecticides or weedicides) as much as twenty acres in one day with a motor-blower, or about eight acres with a spray can. All the rich farmers in Ricetown own motor-blowers, while all the middle farmers and 25 percent of the poor farmers own spray cans. Motor-blowers are not rented, and are loaned only to immediate relatives or very close friends. The Rice Marketing Board at Springlands has motor-blowers which are loaned to farmers. However, none of the farmers in Ricetown take advantage of this because of the red tape involved.

Insects

A variety of insects attack the rice plant from the time it is sown until it is reaped. However, the two most dangerous insects are the stem borer or heart worm as it is popularly known, and the paddy bug or "gandhi." Heart worms attack the rice plant between one and four weeks after sowing. A severe attack by heart worms, if not treated immediately, could destroy an entire field in two days. The paddy bug attacks the plant during the early stages of grain formation causing discoloured (dark) grains, resulting in lower grades and hence lower prices. Agrocide is the most commonly used insecticide for paddy bug.

E. REAPING

Paddy harvesting in Ricetown is completely mechanized. The cutting and threshing of the paddy is done by mechanical reapers (combines). However, some human labour is involved. About three workmen are required to work on the combine during the process of reaping. After cutting, the combine separates the straw from the paddy which comes through a funnel. Around the funnel is a platform where the three men work: one person shakes the bags to make sure they are properly filled, the second sews the top of the bags, while the third arranges the bags on the chute. Bags are not thrown in the field as soon as they are filled, but are placed on the chute until the combine completes its round--from side-line to middle-walk to side-line (see Figure 4, Chapter IV)--where the paddy bags are discharged and another round begins. From this spot the bags are later picked up by porters and transported to the mill or taken home.

Paddy reaping is not only the most important but also the most critical period in rice production. First, this is because of the number of activities--transportation, drying and milling--going on simultaneously with reaping there is a great demand for labour. Secondly, and probably most important, early reaping means early transportation from field to mill, early drying and early milling which eventually means early cash. Thirdly, there is a critical point at which paddy must be reaped; approximately 20-24 percent moisture content (between a span of four to five days) is considered ideal. If there is too much moisture in the grains, that is, if the rice has not ripened properly, it cannot withstand the pressure of mechanical threshing and is crushed into powder. On the other hand, if there is too little moisture the grains (within the shell) crack and processing results in a high percentage of broken grains. Finally, early reaping avoids bad weather. Because of the above-mentioned factors, the two combines in Ricetown are in great demand during the brief reaping period.

Technically speaking, the two combines in Ricetown are enough for the 802 acres in the village. However, one combine owner, Hansraj Haka (pseudonym) owns about sixty acres in Black Bush Polder and as soon as he finishes reaping his paddy in Ricetown, he prefers to take his combine to Black Bush Polder. As a result, farmers in Ricetown suffer a shortage of combines, which must be hired from neighbouring villages. Although the Guyana Rice Board (GRB) offers combines for rent and charges one dollar per bag less (see Table XV, Chapter V, and Appendix V) than is charged by the privately owned combines, farmers from Ricetown do not rent combines from GRB.* When questioned, the *majority of farmers indicated that GRB combines involve too much red tape and political patronage.*

There are three explanations for this seemingly economically irrational behaviour. First, the majority of farmers in Ricetown cannot use GRB combines because their plots are too small (see Appendix IV). Because of this GRB combines are concentrated in government schemes such as Black Bush Polder. Secondly, most farmers considered GRB combines inefficient because they do not operate later than 7:00 p.m.

---

*Privately owned combines charged three dollars per bag while GRB combines were charging two dollars (see Appendix V).

R

as opposed to private combines which operate until 10:00 p.m. Finally most farmers in Ricetown are supporters of the PPP and hiring GRB combines will be seen as fraternizing with the PNC. Most combine owners indicated that it would be convenient for them to employ about three workers throughout the reaping period and pass on the additional cost to the farmers. The main reason given by combine owners is that the plots are small and too much time is wasted changing groups or sets of workers. It is interesting to note that the same criticism was made about transportation of paddy ten years ago when farmers provided labour for transportation. Today, farmers have been completely displaced from paddy transportation by regular porters (see next section) because it is to the advantage of the ricemill/truck owner. From the trend developing, it is not difficult to see that in the near future combine owners will provide hired labour to reap the paddy, thus further displacing poorer farmers while at the same time increasing the overall cost of production and changing the social relations of production.

F. TRANSPORTATION AND STORAGE

Ninety percent of the paddy produced in Ricetown is transported by trucks, the other 10 percent is transported by tractor-drawn trailers. The three ricemill owners in Ricetown have their own trucks with which to transport paddy to their respective mills. The truck/mill owners employ porters to transport paddy from field to factory, and in turn pass on the additional cost to the farmers. Under good conditions, a truck can carry as much as 120 bags of paddy per load, whereas a trailer could take but 40 bags. Traditionally, farmers transported their own paddy. Today, there are two reasons why farmers do not transport their own paddy. First, several millers have indicated that it is inconvenient (economic loss) for them to depend on farmers to transport their own paddy. The reason given is that because of insufficient hands or help at the farmstead the truck cannot operate at its maximum. Secondly, since the reaping and transporting period placed the greatest demand on labour, the farmers, when replaced by the porter in transporting paddy, could find employment themselves either in combining or drying of paddy. This changing pattern from exchange to wage labour is discussed in Chapter VI, section E.

Ideally, farmers would like their paddy to be transported immediately after it is reaped. This, however, is difficult because ricemill/truck owners try to attract customers from outside the village, sometimes as far away as Black Bush Polder, which means that the poorer farmers in Ricetown will have to wait for transportation at the convenience of the ricemill/truck owners. As a result, many of the village's wealthy farmers hire independent trucks to transport their paddy. This frees them from any obligation to take their paddy to any particular mill. To further assert their social and economic independence, wealthy farmers usually store their paddy under their homes and take it to a mill of their choice at their own convenience. Poor farmers cannot always afford on the spot, cash to pay for the truck and porters, and are dependent on a ricemill/truck owner to transport their paddy, which is done at the owner's convenience. It is important to note that this is the first time that most farmers enter a "credit" relationship with the miller. The dependence and obligation of the farmer is further strengthened when the paddy is stored in the mill's warehouse or bond. In Ricetown, only four of the sixteen farmers who took loans from the commercial banks had millers to countersign or guarantee their loans, and in no case did farmers borrow directly from millers.

Each truck has about five porters and can transport about five hundred bags of paddy per day (a porter's working day is about twenty hours; they usually take naps on the truck while driving to and from the fields). The trucks travel along the side-line dams (see Figure 4) and carry planks which are used as a bridge across side-line trenches. Porters assist each other to lift paddy bags (a paddy bag weighs approximately 160 pounds) from the field where they have been dumped by the combines (see section E), onto their backs, shoulders or heads, then to the truck where they are neatly packed. If the bags are not properly packed, the paddy bags may fall off while the truck is moving, and as a result the porter will have the additional task of reloading the truck. Farmers do little or nothing while their paddy is transported. If the paddy goes to his house he simply directs the packing; if it goes to the mill the miller directs the packing.

There is keen competition among rice millers to attract the wealthy farmers. As a result the wealthy farmers who store their paddy under their homes are given first drying and milling preference over the poorer farmers who store their paddy in the ricemill's warehouse. Poorer farmers, by storing their paddy in warehouses, are subject to indirect losses. Paddy stored for a long time can be attacked by insects, the most common being the rice weevil (for further discussion, see Grist 1975:385-405). Second, paddy stored for a long time does not reproduce as much rice after processing as unstored paddy. Third, there is a relatively high amount of pilfering from the mill's warehouses. It is not uncommon to overhear arguments and abuse between millers and farmers concerning the loss of paddy while in storage.

G. DRYING AND PROCESSING

Today there are two types of processing carried out in Guyana: (1) the processing of white rice, and (2) the processing of brown or parboiled rice. The latter is more time-consuming and involves a more complex process of preparation before processing.

Historically, Guyanese and West Indians in general (primarily Trinidadians) demanded parboiled or brown rice.* The first and greatest demand for white rice came in 1959 when the Americans cut off trade relations with Cuba and the Cubans began importing rice from Guyana (discussed in Chapter IV). More recently (1972), Guyanese managed to secure a greater part of the Jamaican market, which traditionally belonged to the Americans, who also demand white rice. As a result there is a great demand on Guyana for white rice rather than the traditional parboiled rice.

---

*Many local experts argue that brown rice consumption in the West Indies is a cultural pattern brought by the East Indians from India. This argument is not true as all evidence seems to indicate that it was a colonial influence. The main reason for suggesting this is that the Indo-Guyanese and Trinidadians (and for that matter all Guyanese and Trinidadians) eat brown rice while the Indo-Surinamese (and all in Surinam) eat white rice. However, all Indo-West Indians use white rice in all religious ceremonies.

White Rice Processing

Freshly harvested paddy contains about 20-24 percent moisture. The paddy must be dried before it is stored or milled. Paddy drying does not require any particular skill. Small quantities of paddy are usually dried on the asphalted public road. Large quantities involving more than 25-30 bags are taken to the ricemill where they are dried on large concrete floors for approximately six hours. Paddy is required to dry up to a critical point. (between 12-14 percent moisture content); if it has too much or too little moisture, the grain breaks during milling, and as a result the quality (grade) is low, hence the price is low. No thermometer is used to check the moisture content. An experienced farmer placing a grain of paddy between his teeth and pressing one end of the grain can tell whether or not the paddy is dry enough for milling.

Drying small amounts of paddy is not considered a difficult task, consequently women and children are active in the process. After the paddy is dried it is bagged and taken inside the factory. The carrying of paddy and rice bags is done exclusively by men. The human labour involved in the milling of the paddy is not very difficult. The paddy is fed into the huller and the rice is collected at the other end. The rice is filled in bags of 180 pounds and is ready to be shipped to

Georgetown where it is blended (several grades mixed into one) before it is shipped abroad.* Although men do all the physically strenuous work, such as carrying paddy and rice bags on the day of milling, women are very active--feeding the huller with paddy, sweeping scattered grains, collecting broken grains and husks for poultry feed.

Over the last seventeen years there has been an attempt to change the method of processing from the traditional brown rice to white rice. Many millers are forced to change in order to meet the demands of the overseas market; as a result a number of multi-stage mills--the most popular being the Japanese-made Sataki--have been imported into the country to replace the single-stage English-made Blackstone engines. Madramootoo (1973:41) noted that of the 209 mills in use in the country only 79 are multi-stage. The average cost of a multi-stage ricemill is approximately $120,000.

The advantages of multi-stage mills over single-stage mills are that, first, single-stage mills cannot produce marketable white rice, and second, besides the grains, the by-products--brans and hulls--are recovered from multi-stage milling. Madramootoo (ibid.:42) noted that in milling with multi-stage, four-fifths of any given paddy is recovered--48 percent whole grains, 20 percent broken grains, 11 percent brans, polishing, etc., and 21 percent hulls. One of the most important features of multi-stage milling is that it can produce both parboiled and white rice and process twice as much as a single-stage mill in the same time.

---

*I was told that the Springlands' warehouse had its own blending machine but it was not in operation during the course of field work.

Brown Rice Processing

As mentioned earlier the system of brown rice processing is more time-consuming than that for white rice. The paddy is first soaked in a large tank (containing up to 100 bags) for approximately forty-eight hours. The water is then drained and the paddy is then transferred to steaming barrels (45 gallons) where it is steamed for about five minutes before it is carried on a wheel-barrow and spread on concrete floors. Unlike white rice, paddy, which is soaked and steamed, requires as much as 16-20 hours of sun drying. Madramootoo (ibid.:42) noted that the largest mill in the country uses a system of "hot soak" which lasts for six hours, then the paddy is treated with "live steam" for about ten minutes before it is dried by hot air. Since steamed paddy requires 16-20 hours of sun drying, it means that in the first and second afternoons after steaming, the paddy must be heaped and covered. Some millers provide galvanized sheets for covering the heaped paddy overnight ; in other cases farmers use their paddy bags

Parboiled rice has certain advantages over white rice: (1) soaking and drying facilitate easy shelling; (2) it gives a higher percentage of whole grains; (3) after milling it makes it more difficult for pests and insects to damage stored grains and finally (4) parboiled rice cuts down on the loss of nutrients in the rice.

In drying paddy, few simple tools are required for both spreading and heaping the paddy. A large scraper or "gangaram" as it is popularly known, is used to spread the paddy. A gangaram is made with one piece of board about six feet long, twelve inches wide and one inch thick. An arm or handle is nailed to the board and supported by two braces.

In spreading paddy two projecting pegs--about four inches--are attached to the gangaram to ensure an even spread over the concrete floor. In heaping the paddy the two pegs are removed. A rope is attached to the two sides of the gangaram and one or two men pull on each rope. Donkeys are sometimes used to pull the gangaram. The grains which passed under the gangaram are swept up. As the sweepings become thicker the small scraper is used to push the paddy to the heap. The "raker" is made with a piece of wood about twenty-four inches wide with a handle nailed to it. A number of wooden pegs are attached to the wood. The raker is used to rake straws and other foreign matter from the paddy because they impede drying. Women more often do the sweeping while children use the small scraper.

All the wealthy, middle and even some poor farmers have their own tools for drying paddy. There is one difference, however, in the quality of the tools. Wealthier peasants carefully select wood and take their time to make their tools, whereas tools owned by poorer peasants are very crude. Although it is not unusual to borrow and lend tools for drying paddy, eight of the wealthier farmers indicated that they do not lend their tools to anyone.

In drying paddy, the paddy must be turned every twenty minutes; the method used for turning paddy is referred to as "kicking." Kicking paddy is done simply by placing both feet flat on the concrete, under the paddy, and dragging them from one end of the concrete to the other. Each way a width of about twelve inches is kicked.

It is worth noting that because of the market emphasis on white rice the government is discouraging farmers from growing the traditional

(D110, D79 and others) varieties (discussed in Chapter IV) which can best be processed into parboiled rice. As already discussed, the traditional West Indian market uses parboiled rice. With the emphasis now on white rice the domestic--and even the Trinidad--brown rice market is suffering. In an interview, Mr. Gavin Kennard, Minister of Agriculture, stated that it would be better for the industry and all concerned if the country's rice-eating population (which is 100 percent) would change their consumption taste from brown to white rice. I pointed out to the Minister that attempts to enforce any such suggestion would meet with resistance from the masses since it deals with cultural changes which seem to have political implications. Secondly, I suggested to the Minister that given Guyana's low level of calorie intake it would be healthier for the people to continue eating brown rice since it is far more nutritious than white rice. In response, the Minister stated that there was enough foodstuff in the country to supplement the calorie deficiency between white and brown rice.

Another factor in the shift from the processing of brown to white rice has to do with the rice milling community. Of the 209 mills in the country in 1973, only 79 were multi-stage, which cost $120,000 each. How many millers with single-stage mills could afford that kind of capital investment? Is it hoped that by a systematic encouragement of white rice processing and discouragement of the production and use of parboiled rice will eventually lead to the elimination of the single-stage mills and hence the small millers? Is it the government's intention to take over slowly the processing aspect of the industry since farmers are being encouraged to sell their paddy to the government-owned mills? (For further discussion see Chapter IV.) Since 1970 the government of Guyana has been boasting of being the first and only country in the world with its (internal) economy based on Cooperativism, and more recently has openly advocated Socialism as its political philosophy. The best method for the rice farmer, it would seem, is to let the ricemills (and even marketing and other sectors of the industry) be organized on a cooperative basis. This would bring not only milling but the entire industry under the reality of Cooperativism, directly involving more than one-quarter of the country's working population.

H. DIVISION OF LABOUR

The high proportion of women in the labour force in rice production in Ricetown indicates the changes in sexual division of labour between the mechanized and the pre-mechanized historical periods. Today, no women participate directly in land preparation, sowing of seeds, spraying of insects and weeds, reaping or transportation of paddy. What has happened is that because of the changes in the methods of production, i.e., from transplanting to broadcasting, the task once performed by women--transplanting--has been completely eliminated (for discussion on transplanting see Chapter VIII). Today, women are most active at the rice mills helping to dry the paddy. Otherwise, if a man is employed during the cultivating period, a woman is expected to visit the fields to check water level and the growth of weeds and insect infestation.

Today, women in Ricetown, besides rearing children and doing other domestic chores, are involved in the growing of kitchen gardens, fishing, poultry rearing, and the collecting of firewood (discussed in Chapter V). These tasks are sometimes done with the help of teenage children.

The use of child labour today in the rice industry has been reduced significantly when compared with the pre-mechanized period (see Chapter VI). As a result, school enrollment is extremely high. One hundred percent of the children in Ricetown between the ages of six and thirteen are in primary schools and 78 percent of them between the ages of fourteen and seventeen are enrolled either in high schools or commercial schools.

I. A MECHANIZED WORK DAY

In most cases a farmer does not accompany the tractor driver to the field, he merely asks him to plough his field. The field is later "doubled" (ploughed twice) and sometimes "tripled" (ploughed three times) after which it is flooded for a while, either by rain or irrigation. In the meantime, the farmer begins to prepare (germinate) his seeds. On the day the land is being prepared for broadcasting, the farmer accompanies the tractor driver to the field, leaving home about seven to eight in the morning. The land is first raked, then levelled or "henga," after which the seeds are broadcast or "shied." With some assistance by a hired hand, and good working conditions, about ten acres can be done four to five times for the week following broadcasting, when it is necessary that water be kept at a critical level of two to three inches deep. If the seeds grow well, then all that is necessary is to keep a field flooded to prevent the growth of weeds and to apply fertilizers, insecticides and weedicides, when necessary.

Reaping seasons, assuming the weather is good, are much simpler than the sowing seasons. Combines do not operate early in the morning since rice straw, if it is cold, tends to choke mechanism. Reaping usually begins about seven in the morning and continues until seven or eight in the evening. Since most plots are small, several plots can be reaped on the same day. Today, trucks have replaced both the "cow cart" and the trailer as a means of transporting paddy from the fields to the mill. Thus, if a farmer is properly organized his paddy could be reaped and transported from the field to the factory the same day.

J. INNOVATION AND RESISTANCE

Through a brief examination of some of the problems associated with the introduction of the Blue Belle and Starbonnet (seed paddy) varieties of rice in Guyana, we may be able to understand why farmers are reluctant to accept new varieties which are often associated with new cultural practices in cultivation. In the latter half of the 1960's the government embarked on a program to introduce Blue Belle seed paddy from the United States. The reasons were that the traditionally grown D110 and D79 types, among others, were not suitable for mechanical cultivation, they lodged easily and produced straw which was too long and which choked the combine during operations. Further, these traditional varieties were not high-yielding, and did not respond to fertilizers. It was hoped that the Blue Belle type would assist in standardizing varieties and produce better pure-line seeds, which would result in the production of high quality rice. In the all-out drive to boost Blue Belle the government lost hundreds of thousands of dollars (Ramlakhan, n.d.:40) while several farmers--especially the wealthier ones--suffered the same fate. According to Ramgopaul, the RPA urged that "since Blue Belle was a new variety and needed cultural practices unknown to the local farmers, more field demonstrations should have been carried out before the variety was widely distributed in all the areas" (1968:16). The lack of adequate practical experiments on the adaptability of the Blue Belle variety to the local environment seemed to have been the major problem. A small farmer, Mr. M. Amin, from No. 57 Village on the Corentyne Coast, explained his problem to Mr. R. Charran, a student from the University of Guyana:

> I was convinced by the Agricultural Field Assistant that a person should try a thing before he condemns it. I prepare my 4½ acres of rice land under the Field Assistant's instructions for the growing of Blue Belle. Having heard that it can double my income and (as) a small farmer I was glad to earn more money to feed my family.
>
> I purchased enough seed from the Agricultural Field Assistant and was given free fertilizers, insecticides, etc. I sowed the plot and grew the crop under his supervision. Because of the extra care and attention I gave this crop, you can imagine my disappointment when I reaped only twenty-six bags of dry paddy. My neighbour who cultivated less than three acres of the local variety and who used less fertilizer and gave less attention to his crop, reaped 37 bags--11 more from 1½ acres less (cited by permission of Dr. Fred Sukedeo).

Farmers from the surrounding villages were looking keenly at Mr. Amin's experiment. We do not need to ask what their reactions were following the failure of Blue Belle on Mr. Amin's plot.

There were several factors which could have contributed to the failures: some were technical, others environmental or social. The scientists, engineers, or agriculturalists in carrying out demonstrations were faced with a major problem of communication. This is because, more often than not, they were not familiar with the social and economic background of poor farmers and could not explain new ideas, techniques and methods in terms of the farmer's day-to-day experience. Coleman (1966:33) pointed out:

> The innovator must be able to explain the reasons behind each operation and to demonstrate how to carry it out. The man who is prepared to shout instructions from the bund of paddy field is not likely to gain the support for his methods which could easily be gotten if he took off his shoes and plunged into the mud and did the job himself.

The practical problems in Guyana's rice industry are twofold. First, there is a lack of trained agriculturalists, and many agricultural officers see their job as an administrative one and are not prepared to get their hands dirty.

Caffey and Efferson, the American experts commenting on the Blue Belle program, said:

> The over-all scope and intensity of this program is such that it has served only to slow down the most damaging fires and to give minor assistance to the over-all development of the industry. Blue Belle is at best a stop gap . . . . It is known, however, that this variety is not resistant to *Hoja-Blanca*, the most serious virus disease in the Western Hemisphere, and with wide spread planting, there is danger that the disease will become prevalent as it has in nearby Venezuela. As is usually the case, the higher-quality, high yield varieties, including Blue Belle can be expected to be much more selective in their requirements for water control, adequate fertilization, good weed control and other practices (1967:6-7).

It seems clear that under ideal conditions Blue Belle would be an excellent variety. But Guyana cannot provide these ideal conditions because it lacks these agricultural practices, good drainage and irrigation facilities, cost of fertilizers, insecticides, etc. Why should Blue Belle, "at best a stop gap," have been forced on the Guyanese farmers? The necessary additives (fertilizers and insecticides) required for good production were produced in Guyana, and therefore introducing these foreign varieties of seed led to the outflow of capital and a continued state of dependence* of Guyana and its farmers.

In recent years many senior administrators in the rice industry have been arguing that if small farmers are to survive they must either band themselves in cooperatives and/or revert to simpler technology.** During the 1974 autumn crop the government offered, through the Rice Board, loans of up to $150 for small farmers to reap their crops by hand and warned that government machinery will not be hired to cut less than five acres (see Appendix V). From an economic point of view this argument is not only logical but economically sound. However, many small farmers argue that it is uneconomical for them to reap their paddy by hand. Why should they spend a week to reap an acre by hand when a combine can reap it in less than an hour and at less cost? Of the 183 domestic units in Ricetown, only two units were involved in reaping a part of their crop by hand. Richardson (1970:170) also noted that, of the 100 farmers he had interviewed in the Block III area only two reaped

---

*It was not unusual to find up to fifty persons at the *Board's warehouse* awaiting authorization to purchase fertilizer. The Guyana Rice Board subsidizes fertilizer approximately fifty percent. As an incentive, preference to purchase fertilizer is given only to those who grew Starbonnet. Because of the high subsidy on fertilizer, distribution was subjected to abuses. There were rumours that fertilizers were being smuggled to neighbouring Nickerie where the price is twice as high. (There is some reason to believe these rumours as the police have charged a few people with smuggling.) At the end of the sowing season (1974) many wealthy farmers, through unknown means, had hoarded enough fertilizer for the following crop, while many small farmers could not muster enough for the present crop.

**This point was strongly emphasized during interviews both with Mr. Gavin Kennard, Minister of Agriculture, and Mr. Harry Madramootoo, Director of Rice Research.

their paddy by hand. He further showed that 33 percent owned tractors and 67 percent borrowed or rented tractors, while none used animals to plough their plots. This is further supported by Madramootoo (1971:1) who pointed out that mechanical equipment is the standard feature on at least 95 percent of the ricelands in the country and the present trend is towards heavier and larger machines.

One interesting observation is that not only are the techniques for rice production for the pre-1950's nonexistent today, but more importantly, I found that there is an absence of draught animals and tools, e.g., ploughs, chipper boards, rakes and collar. There are many young men in their late teens in Ricetown who are involved in rice production but who have never seen a pair of bull oxen drawing a plough or chipper board. Attempts on the part of the government to reactivate cow and plough technology will meet with resistance from them and may eventually fail.

Another American variety of seed paddy introduced into the country at the end of the 1960's was Starbonnet. This variety has proven to be highly productive under the local conditions. Starbonnet also exhibits all the necessary characteristics for mechanical cultivation. It is responsive to fertilizer and high-yielding. However, unlike the traditional BG70 and D110, Starbonnet needs extreme care, attention and precise agricultural methods and practices.

One of the major advantages of growing Starbonnet variety under conditions such as those found in Guyana, is that it is probably the most suitable variety for underwater (3-8 inches) growth (for a detailed discussion see Madramootoo 1970c). Given the precision required for efficient growth of Starbonnet we can understand why creating an ideal condition for growing this variety has posed such serious financial problems. Small farmers cannot afford the high initial capital input required for varieties such as Starbonnet (discussed in Chapter V).

K. SUMMARY

In this chapter, I discussed the tools, techniques, and social relations of rice production in Ricetown. The technical changes which occurred in the rice industry in the mid-1950's triggered off other forms of changes (see Chapter IV) both within and without the rice industry. New varieties of seeds were introduced into the industry which eventually led to further changes such as the use of chemicals and fertilizers. Technological changes have also led to the need for spare parts and fuels. This, coupled with the need for fertilizers and chemicals, led to a greater dependency on the outside world. It has also modified the division of labour and labour specialization.

As a result of changes in the technical means of production we find that poorer farmers are finding it more and more difficult to keep up with the need for initial capital input from year to year. The methods and techniques have shifted from a labour- to a capital-intensive means of production which resulted in widespread displacement of labour. The (poorer) farmers who, between the mid-1940's and the mid-1950's, owned their own "cow and plough" must today depend on wealthier farmers to plough their fields and combine their paddy.

PART FOUR

This section deals more specifically with suggestions. These suggestions are based on two premises. First, I take into consideration the government's socialist policies, and secondly my own awareness of the problems faced by the farmers, not only in Ricetown but throughout Guyana.

CHAPTER IX

CONCLUSIONS AND SUGGESTIONS

It was stated in the introductory chapter that this study deals with the influence of technology on peasant-type agriculture and more specifically with the social, ideological, economic, cultural, and technical problems associated with the mechanization of the rice industry and the institutional changes that follow from this. The history of the expansion of the rice industry shows that the industry was geared to produce cheap food; first for the sugar and bauxite workers in Guyana and later for the other Caribbean territories. A survey of the literature, both published and unpublished, clearly reveals that this subject has been studied with a particular bias. It seems obvious that the bias is pro-American/pro-capitalist since most of the research (see Appendix III) was carried out by "foreign experts" most of whom were Americans. This is only one of the many ways by which the legacy of colonialism/capitalism manifests itself and lingers on, and where leaders of newly politically independent nations are victims of European and American imperialism. The economic and cultural dependence persists. According to Thomas:

> The pervasiveness of the view of limited capacity of our people to master their environment is largely due to the society's internalization of Euro/American views. Dependence grows, entrenches itself, and obstructs the liberating potentialities of socialism (1974:306-307).

In accepting the advice of "foreign experts" Guyanese do not seem aware of the connection which could exist between those experts who recommend the use of Blue Belle (which has proven unsuccessful) and Starbonnet to be used in Guyana and those others who produce fertilizer for the Guyanese market. The recent history of the Guyanese rice industry is a classic example of a continuing "dependent economy" within societies which have recently attainted political independence. Prior to the introduction of new seed varieties (especially Blue Belle and Starbonnet), rice in Guyana was grown without fertilizers, insecticides and weedicides. Today, over twelve million dollars are spent on the importation of fertilizers alone. Agricultural practices associated with the new rice varieties have become dependent on foreign additives. This new agricultural practice has shifted the "independence" of an almost solely Guyanese commodity to "dependence" on multinational corporations which produce these additives.

In Guyana the problem of overmechanization has been brought to the attention of the government who has taken the initiative to "restrain" mechanical expansion but has been encouraging the use of new seeds (Blue Belle) which have failed. If we calculate the problems associated with the introduction of the new variety we would find that the "cost benefit" was not as great as the government economists claim. Agricultural economists use the input/output ratio, to give the "cost benefit," and to argue whether or not a commodity is profitable and what methods could be used to increase production. The major problem with this approach is that the human value and the human involvement is ignored and everything is calculated in units of dollars and cents. Too often, only the immediate results are examined without serious consideration of the long-term effects.

On a theoretical level, it seems difficult to accept the views expressed by certain writers about their concepts of development and underdevelopment, or to accept what they have expressed as the root causes for the technological innovation. Since it has been established in the introductory chapter that technology is only a mediating factor--the discussion in this concluding section and the recommendations rest on these premises: (1) ideology has played, and continues to play a very significant role in determining the kinds of technical changes that have taken place and will be significant in those that are likely to occur in the future; (2) the changes suggested will be in accordance with the government's declared socialist principles.

Over the years many economists and social scientists have labeled two factors as the root causes of the problems in the Guyanese rice industry. First, the acreages for the majority of farmers were too small (see Table VIII) and the government could not satisfy the annual demand for more and better drained and irrigated ricelands for the small farmers. Second, there was the burdensome outflow of capital from the rice industry to purchase machinery, fertilizers, insecticides and so on. Although both points are relevant, neither of these factors takes into consideration the overall interests of the majority of small farmers. Let us examine the first problem of too small acreages. Prior to mechanization, a family of six, with six acres, growing one crop, could save a few hundred dollars at the end of the crop year. They were able to because there had been little input other than family labour and there was more time available to seek part-time employment and/or to grow a garden, or raise poultry or a few cattle to supplement income and savings. Today the technical parts of the rice industry, such as process, have shifted their emphasis from brown to white rice and to bulk harvesting which requires less manual labour and is leading to further mechanization. If we project the same social and economic conditions today to the year 1980 we would find that the same family of six, with fifteen acres of rice double-cropping, would find themselves in a similar socioeconomic condition, if not worse than that in which they were in 1976. To amplify the problem let us look at a (small) farmer in Western Canada where six hundred acres are hardly enough to enable him to live above subsistence (see Hedley 1976:16-23). Although Thomas' (1974) study deals largely with transitional societies, his argument that farmers are "progressively being forced off the land under capitalism to become landless labourers and eventually the urban proletariat," is applicable to the problems of the farmers of Western Canada. However, in the case of Guyana, because of the lack of an industrial base, farmers driven off the land become "lumpen," and not "urban" proletariat.

Another problem is the outflow of capital for the purchase of machinery and chemicals. Let us suppose that Guyana was in a position to manufacture its own machinery for its rice industry, would that solve the problems of the small farmers? It certainly has not solved the problem for the relatively small farmers in Western Canada and the United States. Thus, the argument that the availability of more lands to the small farmers and the preventing of outflow of capital from underdeveloped countries would solve the problems is only "side-stepping" the basic issues and settling for partial solutions to the problem.

For us to comprehend and advocate changes in a society in the process of transition, from a neo-colonial/imperial structure to a socialist system, we need to understand the dynamics of the domestic economy and social inter-relationships of that society, or as Thomas (ibid.:302) stated "resource-domestic resource use and production-domestic technology-domestic production-domestic needs," before we can understand what necessary steps to take.

The economics of mechanization reveals yet another problem. In 1960 a 135 HP Massey Ferguson cost $3,500; in 1975 the same tractor cost $13,500 (Sutherland 1976:19). In 1960 it cost 175 bags of milled rice to purchase the 135 HP Massey Ferguson. However, in 1975 the same tractor has a market value of 340 bags of milled rice (Ramlakhan, n.d.: 13).

The problems of the rice industry and rice farmers are often clouded with the question of ethnic disparity. Most of the authors, Despres 1966, Smith 1957, Richardson 1973, and Henley 1974, to name a few, have pointed out that the rice industry has been dominated by Indo-Guyanese. It is true that the productive sector is dominated by the Indo-Guyanese, but it is dangerous to use such evidence to base one's social, economic and political analyses. Such empirical evidence is the negation of the historical foundation upon which the industry was built. Ethnicity is not a criterion for the production of rice. Rice production, or the ability to produce rice, is based on the socialization process, availability of land and capital input. Any Afro-Guyanese who has been socialized into the process of rice production and has access to land and capital, may be considered a far more "progressive" farmer than an Indo-Guyanese who cannot afford the necessary inputs. Thus, ethnic stereotyping over the years has led to further confusion and has helped to cloud the real issues surrounding the industry.

Wealthy and progressive farmers have been used by the government to demonstrate that the right kind of individual can improve the industry and his position in it; that others do not succeed is attributed to their own backwardness. But these successful entrepreneurs have received financial assistance (in 1974 approximately five million dollars were given to farmers in the form of subsidies), and were also "hand picked" as leaders of the community. This mutual assistance is a form of political patronage with reciprocal benefits. This type of support to wealthy farmers has become a base for state-supported capitalism which in every case has been at the expense of the poor farmers. According to Thomas:

> The entrenchment of these capitalist elements in the rural area, supported by public funds and facilities, has been accompanied by the dispossession of the small peasant holders and by rampant speculation leading to higher prices and rent (ibid.:287).

The problem of class stratification or identification is not an easy one in societies which are in the process of transition. The classification cannot be easily articulated since demarcation along class lines cannot be seen simply as owners versus non-owners of the means of production, as is the case in advanced industrial societies.

Politics has always played a dominant role in the rice industry, which has been the source of livelihood for thousands of families in the country, especially those who have been directly involved in the process of production. It would be naive if we try to argue that the government should take its "hands off the rice industry." It would also be naive to think that the government would leave the industry in the "hands of the rice producers." Rice, within the last quarter of a century, has become the most important industry in the country. More people depend on rice more than any other industry, not only as a staple but also as a commodity, which means it has numerical strength. Direct control of the rice industry means direct control of the social, political and economic life of the majority of the people in the country. Rice is also one of the major sources of foreign exchange, which means economic power. Caffey and Efferson in their feasibility study stated that:

> The rice industry of Guyana produces more than 15 percent of the total gross national product and is the second most important producer of foreign exchange. With the currently depressed world market situation for sugar--the major foreign exchange corner for the nation--and relatively favourable world market demand for rice, the rice industry represents the best available resource for improving the foreign exchange earning in Guyana (1969:2).

It is difficult to disagree with Caffey and Efferson's conclusion. However, when the Jagan government attempted to expand the rice industry, the opposition (now in government) and the foreigners who had vested interests in the country labelled his government a "Rice Government." Not long after the opposition took office in 1965, the importance of rice, both in its economic and political aspects, was quickly realized.

That the expansion and modernization of the industry demands a higher quality of rice, and more efficient marketing and storage facilities, were quickly realized. However, the major problem remains, that is, the majority of farmers are still alienated from direct participation in the industry. If the present trend of development in the industry continues we will find that more and more of the small "marginal" farmers will be forced to sell their lands to seek full-time employment elsewhere. Thus, we must view the problem from two points: (1) technical, and (2) the sociological or human aspects associated with rice production. Given the existing capitalist structure, if we tackle the technical problem, i.e., higher levels of technological input, the small farmers will be eliminated--by the larger ones--which is sometimes referred to as "progressive." But then we must tackle the human problems associated with rice production since they constitute the most important variable associated with the industry. It is paradoxical to attempt to establish a socialist society while at the same time alienating a great proportion of the people from the process of participation.

As previously stated, the suggestions in this section take into account the government's ideological position, that is, its professed dedication to establishing a socialist society in Guyana. Also, I wish to say explicitly that these suggestions and recommendations should be seen as necessarily limited since they are only piece-meal in design and are only meant to alleviate the immediate problems of the rice industry. A general reconstruction of the rice industry and indeed the entire Guyanese economy would require much more than such miniscule attempts. Rather, any alteration of the rice industry must take into account its relationship with the entire social, economic, political as well as the cultural forces which shape that society. And, Guyana's relationship with the external world must also be taken into consideration.

Suggestions

Technological organization of rice production in Guyana is faced with two immediate questions: (1) Higher levels of technology have not proven to be beneficial to the majority of poor farmers. ([illegible]) The majority of farmers have lost the older technical skills required to revert to the traditional "cow and plough" method of production. Madramootoo has summed up the problems thus: "Machinery is here to stay." What then are the alternatives? The answer to this question lies in who exercises ultimate control over technology.

There exists a problem of communication between officials of the Rice Board and farmers. Sometimes this problem manifests itself in political terms but more often in ethnic terms. Although I have argued throughout this thesis that the problems of the rice industry (and in the country), are not racial, it has been brought to my attention--throughout the course of field work--that Afro-Guyanese were given employment preference by officials, over others. This is viewed by farmers as racial discrimination. However, the question of political patronage seems to take precedence over racial discrimination. The major problem associated with political patronage is what Guyanese refer to as "putting square pegs in round holes," which leads to inefficiency, and a breakdown in effective administration. In this case, both the Rice Board and the farmers suffer. To carry the point further we could argue that since it is the farmer who finances the Board, in the long run it is the farmer who loses.

Developing a communication system between senior officials and farmers would help to break down the present barrier. Senior officials especially those who are rural based, should make themselves more available to farmers. This would expose them to the grass root problems of the farmers, which could then be tackled efficiently. Criteria for employment in the administration of the industry should be based on qualifications and performance, rather than on political patronage.

Officials at the Board should be taught that their job and the industry as a whole depends on how well the farmers perform in production, which depends in part on how efficiently administration looks after the needs of the farmers. The point is worth repeating. Officials should not expect a farmer to be patient, or to "come back tomorrow" or "next week" when his year's livelihood is in jeopardy.* Farmers should have the right of access to officials, and should not fear to discuss their problems freely with senior officials.

The day-to-day function of the Rice Board (in the rural districts) must be geared to meet the needs of the farmers, that is, to provide insecticides, weedicides, fertilizers and so on. Experience has shown that negligence has resulted in severe losses.

Individuals who have acquired jobs in the Rice Board through political favouritism should be removed, as they are an impediment to the Board's smooth functioning.

Many farmers, especially the wealthy ones, need to be educated, not only in maximizing the use of their machinery and the new agricultural techniques in production but in the social and human values associated with transformation from one social system to the other.

---

*When heart worm attacks the rice plant and immediate attention is not given the results are disastrous. In a matter of two or three days an entire field could be completely destroyed.

The Rice Producers' Associaton (RPA) which once represented the rice producers has declined in influence. This is partly because their representation on the Rice Board has been reduced and partly because they have been denied financial assistance from the Board. The reason for this denial according to some officials of the Board is that the Rice Producers' Association is involved in "political activities." In answer to these charges the Editorial Comments of the "Rice Review" stated that the RPA is "dedicated to serve the rice industry and not any political party or government whose policy may be inimical to the interest of rice producers" (1966:7). Despite the above comments everyone knows that the RPA is sympathetic towards the PPP. Every organization or association in the country is, one way or another, involved in party politics. If it supports the government it is seen as an "arm" or "wing" of the PNC. If it supports the opposition it is seen as an arm or wing of the PPP (Prime Minister Forbes Burnham once noted "there is no time for sitting on the fence"). One of the problems in rural Guyana is that the majority of people are alienated from the political process by corruption at the national elections, by corruption at the local government elections, and by the elimination of the Rice Producers' Association from active participation in the decision-making process of the industry. Recently (1975), the government agreed that the long (1953-1976) outstanding dispute between the Guyana Agricultural Workers' Union (GAWU) and the Man Power Citizens Association (MPCA) should be settled by ballot. GAWU won with an overwhelming majority. Similar opportunity should be given to the RPA or any other rural union to represent rice producers.

Corruption (bribery) at all levels should be eliminated. Farmers must be taught that the Board's officials (and other public servants) are there to serve them. It is only through the increasing accountability of the Board to farmers and farmers' representatives that such problems could be eliminated.

The Rice Board has placed a restriction on the sale of fertilizer. Only those farmers who could prove that they are growing Starbonnet (or any other recommended brand of seed paddy) would be sold fertilizers. This seems reasonable since the government has been subsidizing fertilizer up to fifty percent. On the other hand, there would be no need for this type of restriction if farmers were educated in the proper use of fertilizer. They should have it explained to them that the traditional varieties (D110 and D79) are not responsive to fertilizer and any use of them would be a waste of money and labour.

In the course of field work I heard rumours that fertilizers from Guyana were smuggled across to neighbouring Nickerie, where the price is twice as high. This is because the Guyanese government offers up to fifty percent subsidy on fertilizer. There are reasons to believe that such smuggling is going on. What seems important, given the present restriction and difficulty in obtaining fertilizers, is it is difficult to see how small farmers, who could hardly afford to purchase fertilizers for their own use, could also afford such "trafficking." In other words, if such trafficking is going on then it is done by those who have easy access to fertilizer~~--over~~ and above their heads.

Certain types of small agricultural production, such as that of tomatoes or oranges, need not be established in or around the city. These industries have their raw material in the rural districts and the industry should be established where the raw materials are found most abundantly. Establishing such industries in rural areas could avoid transportation cost for the raw material and entail cost only for the finished product. To magnify this transportation problem, let us assume that the paddy from Corentyne and Essequibo were shipped to Georgetown to be milled into rice. This is a waste of both manpower and capital. The setting up of small industries in the rural districts would also help to prevent rural dwellers from emigrating to urban areas to seek employment, which is often associated with other social problems.

It is not easy to point to any one method or system of grading of rice that would satisfy all the farmers. Over the years, the Board has constantly changed its system of grading in order to prevent corruption, but somehow it still goes on. Many farmers complain of the low grades. Although the Board has a system where farmers dissatisfied with grades could "appeal" their case, many farmers do not appeal since they claim that the bureaucracy is too complex and this process too costly. Another bureaucratic problem is the lag between the time the farmer receives his "advance" until he receives his final payment, which sometimes lasts up to a month. Most farmers are in debt all through the crop year and are eager to receive their final payment to repay their debts.

The election machinery in the village elections must be so organized that the majority of the people may be part of the decision-making process. Mass participation is the first step towards establishing a socialist society. Currently, most farmers do not feel that their views are represented in either the National Assembly or in Local Government. Representation in the Local Government in the Upper Corentyne area is based on affiliation with the ruling party in power. It is a fundamental contradiction for the government to advocate socialism as its guiding principle and use a set of hand-picked supporters and "party die-hards" to manage the affairs of the people. Many of these (opportunistic) individuals do not support the PNC government because of its philosophy but because it is in power. Many of them were active supporters of the PPP while it was in office, while others defected from the UF when it became obvious that it could not make any meaningful impact in the political arena--especially in the rural areas.

It is misleading to claim that the "Rice Board produces a surplus." The Board does not produce any rice and as such cannot produce any surplus. It is the farmers who produce rice and any surplus that is made is made by them. When there are losses in the industry, they are passed on to the farmers (as during the period 1965-68--see Table IV). When there is surplus, it is appropriated by the Board. This surplus--or a greater part of it--should be returned to the rice producers, after paying expenses such as debt charges and so on.

Many writers have suggested that intensifying production would be a solution to the problems of the small farmers. Intensifying production, expanding land-holdings, maximizing the use of available technology and even increasing rice prices, are all good, but only offer partial solutions to the problems. What is needed is a total transformation of the society where human values take precedence over material objectives. Guyanese farmers, like farmers in other capitalist societies, have not been accorded the dignity merited by their "profession"--after all, they are the "feeders" of the nation. Why should we reserve special status for members of the academic and professional classes and ignore farmers and other workers? The question lies at the heart of the social system which we have inherited; the answer lies within a socialist system which seeks to give every person the human pride and dignity of which they have been robbed.

BIBLIOGRAPHY

Adams, R. N.
1967 *The Second Sowing*. San Francisco, California: Chandler Publishing Company.

Adamson, Allan H.
1972 *Sugar Without Slaves*: The Political Economy of British Guiana 1838-1904. New Haven, Connecticut: Yale University Press.

Adhin, J. H.
1961 *Development Planning in Surinam in Historical Perspective*. Leiden: H. E. Stenfert Kroese, N.V.

Anderson, Robert T.
1965 Studies in Peasant Life. *Biennial Review of Anthropology*. B. J. Siegal, ed. Stanford, California: Stanford University Press.

Akira, Takahashi
1969 *Land and Peasant in Central Luzon*. Tokyo: The Institute of Developing Economics.

Alatas, Syed M.
1972 The Captive Mind in Development Studies. *International Social Science Journal* 24:9-25.

1974 The Captive Mind and Creative Development. *International Social Science Journal* 26.

1977 *The Myth of the Lazy Native*. London: Frank Class.

Allchin, Bridget and Raymond
1968 *The Birth of Indian Civilization: India and Pakistan Before 500 B.C.* Middlesex, England: Penguin Books Inc.

Ambassador College Agricultural Research Department
1974 *World Crisis in Agriculture*. Pasadena, California: Ambassador College Press.

Andrews, C. F.
1930 India's Emigration Problem. *Foreign Affairs* 8:430-441.

Andrews, E. M.
1974 Estimate of Expenditure and Rate of Assessment, for the Upper Corentyne District Council (52-74).

Bacchus, M. K.
1966 Social Factors in Secondary School Selections in British Guiana. *Social and Economic Studies* 15.

1969 Patterns of Educational Expenditure in an Emergent Nation - A Case Study of Guyana 1945-65. *Social and Economic Studies* 18:287-309.

1970 Education and Social Cultural Integration in a "Plural Society." Occasional Paper Series, No. 6. Montreal: McGill University.

Balandier, Georges
Political Anthropology. New York: Pantheon Books, A Division of Random House.

Balandier, George
1954 Comparative Study of Economic Motivations and Incentives in the Traditional and Modern Environment. *International Social Science Journal* 6:372-387.

Baran, Paul A.
1957 *The Political Economy of Growth*. New York: Monthly Review Press.

Barnett, H. G.
1958 Anthropology as an Applied Science. *Human Organization* 17. New York: The Society for Applied Anthropology.

Bartels, Dennis
1977 Class Conflict and Racist Ideology in the Formation of Modern Guyanese Society. *The Canadian Review of Sociology and Anthropology* 14:4.

Beachey, R. W.
1957 *The West Indies Sugar Industry in the Late Nineteenth Century*. Oxford: Basil Blackwell.

Becker, Ernest
1967 *Beyond Alienation*. New York: George Braziller, Inc.

1968 *The Structure of Evil: An Assay on the Unification of the Science of Man*. New York: George Braziller, Inc.

1971 *The Lost Science of Man*. New York: George Braziller, Inc.

Beckford, G. L. F.
1966 Agricultural Development in "Traditional" and "Peasant" Economies. *Social and Economic Studies* 15:151-161.

Beckford, George L.
1972 *Persistent Poverty: Underdevelopment in Plantation Economies of the Third World.* New York: Oxford University Press.

1975 (Ed.) *Caribbean Economy: Dependence and Backwardness.* Mona, Jamaica: Institute of Social and Economic Research, University of the West Indies.

Benedict, B.
1970 Pluralism and Stratification. *Essays in Comparative Social Stratification.* L. Platnicov and A. Tuden, eds. University of Pittsburg Press.

Bernstein, Henry (ed.)
1976 *Underdevelopment and Development.* New York: Penguin Books.

Berreman, G. D.
1963 *Hindus of the Himalayas.* Berkeley, California: University of California.

1968 Is Anthropology Alive? Social Responsibility in Social Anthropology. *Current Anthropology* 9:391-396.

Berrill, Kenneth
1961 Comments on the "Economic Future of British Guiana" by Peter Newman: A Comment. *Social and Economic Studies* 10:1-5.

Best, Lloyd
n.d. Externally Propelled Industrialization and Growth in the Caribbean [Model III - 1945-65]. The Economy of the British Commonwealth Caribbean: An Overview.

1966 Size and Survival. *New World Quarterly.* Guyana Independence Issue. Georgetown: World Quarterly Associate Group.

1968 Outlines of a Model of Pure Plantation Economy. *Social and Economic Studies* 17.

Bock, Philip (ed.)
1969 *Peasants in the Modern World.* New Mexico: University of New Mexico Press.

Borome, Joseph
1960 John Chandler's Visit to British Guiana. *Caribbean Studies* 4.

Bradley, Paul
1961 The Party System in British Guiana and the General Elections of 1961. *Caribbean Studies* 1.

Brewster, Havelock
1969 The Pattern of Change in Wages, Prices and Productivity in British Guiana, 1948 to 1962. *Social and Economic Studies* 18:107-136.

Braitewaite, L.
1960 Social Stratification and Cultural Pluralism. *Annals of the New York Academy of Science* 83:817-842.

Brewster, John M.
1969 The Machine Process in Agriculture and Industry. *Readings in the Economics of Agriculture*, Vol. XII. Homewood, Illinois: Richard D. Irwin, Inc.

British Guiana
1946 *Hansard*. Georgetown: Government of British Guiana.

Bronkhurst, Rev. H. V. H.
1888 *Among the Hindus and Creoles of British Guiana*. London: T. Woolmer.

Brookfield, Harold
1975 *Independent Development*. London: Cambridge University Press.

Brown, L. R.
1970 *Seeds of Change*. New York: Praeger Publishers.

Buchanan, R. A.
1965 *Technology and Social Process*. New York: Pergamon Press.

Burke, John G. (ed.)
1966 *The New Technology and Human Values*. Belmont, California: Wadsworth Publishing Company.

Burnham, L. F. S.
1970 *A Destiny to Mould*. Trinidad and Jamaica: Longman Caribbean Limited.

Burns, Tom (ed.)
1969 *Industrial Man*. Harmondsworth, Middlesex, England: Penguin Book Ltd.

Caffey, H. R., Efferson, J. N.
1965 *An Appraisal of Rice Production and Marketing Problems in British Guiana*. Georgetown: Reproduced by the Government Printery.

Campbell, Persia C.
1971 *Chinese Coolie Emigration to Colonies Within the British Empire*. London: Frank Cass and Company Limited.

Caribbean Commission, Committee on Agriculture . . .
1946 *Caribbean Land Tenure Symposium.* Washington, D.C.

Caribbean Market Survey
1955 *Rice.* Port-of-Spain, Trinidad: Caribbean Commission Central Secretariat.

Case, Gerald O.
1949 Notes of the Natural Resources of B.G. *Timehri.* Georgetown: Daily Chronicle Ltd.

Census Research Programmes
1970 *Population Census of the Caribbean Commonwealth* 3. Jamaica: University of the West Indies.

Chagnon, Napoleon A.
1977 *Yanomamo: The Fierce People* (second edition). New York: Holt, Rinehart and Winston.

Charran, Richard
n.d. Research Paper on *The Rice Industry in Guyana.* University of Guyana.

Chase, Ashton
1953 *One Hundred and Thirty-Three Days Towards Freedom.* Kitty.

1964 *A History of Trade Union Movement in British Guiana 1900-1961.* Guyana: New Guyana Co. Ltd.

Childe, G. V.
1967 *Man Makes Himself.* A Mentor Book published by the New American Library.

Ching, J. L.
1975 "The Credit Programme," A Report Presented at a Seminar for Rice Workers held at Sophia, Georgetown.

Cheng, S. H.
1968 *The Rice Industry in Burma 1852-1940.* Singapore: University of Malaya Press.

Clarke, Edith
1966 *My Mother Who Fathered Me* (second edition). London: Ruskin House, George Allen and Unwin Ltd.

Clark, Kenneth B.
Dark Ghetto: Dilemmas of Social Power. New York and Evanson: Harper and Row Publishers.

Clayton, Eric
1964 *Agrarian Development in Peasant Economies.* New York: Pergamon Press, the Macmillan Co.

Cleare, L. D.
1962 *Rice Storage and Drying in British Guiana.* Rice Storage Investigations Publication No. 3. Georgetown, British Guiana: Department of Agriculture.

Cohen, Y. (ed.)
1968 *Man in Adaptation. The Cultural Present.* Chicago: Aldine Publishing Company.

Coleman, Francis
1966 Problems of Introducing Machines to Small Cultivators. *Mechanization of the World's Rice.* Published by Massey-Ferguson Ltd. and distributed by Basil Blackwell, Oxford.

Collins, B. A. N.
1963 Racial Imbalance in Public Service and Security Forces. *Race* 7.

1964 The Civil Service of British Guiana in the General Strike of 1963. *Caribbean Quarterly* 10.

1965 The Three Faces of British Guiana. *Social and Economic Studies* 14:225-230.

Copeland, E. B.
1924 *Rice.* London: Macmillan and Co. Ltd.

Cottrell, Fred
1955 *Energy in Society.* New York: McGraw-Hill Book Company, Inc.

Coulthand, G. R.
1968 Paternalism and Divergences between "Negnitude" and "Indigenismo." *Caribbean Studies* 8:31-55.

Craig, Dennis R.
1970 English in Secondary Education in a Former British Colony: A Case Study of Guyana. *Caribbean Studies* 10:113-151.

Cummings, Leslie P.
1970 *Georgetown of Guyana.* Great Britain: Collins Clear-Type Press.

Cumper, G. E.
1961 Investment Criteria: A Comment. *Social and Economic Studies* 10:18-24.

Dakmen, Erik
1949-50 Technology, Innovation and International Industrial Transformation. *International Social Science Journal* 1-2:246-252.

Daly, Vara T.
1966 *A Short History of the Guyanese People.* Georgetown, Guyana: Daily Chronicle Ltd.

Dalton, H. G.
1855 *The History of British Guiana.* 2 vols. London: Longman, Brown and Green.

Dalton, George
1971 *Economic Anthropology and Development.* Essays in Tribal and Peasant Economies. New York: Basic Books, Inc.

1971 (Ed.) *Economic Development and Social Change.* New York: The Natural History Press.

David, Wilfred
1969 *The Economic Development of Guyana 1953-1964.* Oxford: Clarendon Press.

Davis, Horace
1963 The Decolonization of Sugar in Guyana. *Caribbean Studies* 7.

Davis, Leo
1965 The East Indian Family Overseas. *Social and Economic Studies* 14:283-296.

De Kadt, Emanuel (ed.)
1972 *Patterns of Foreign Influence in the Caribbean.* Toronto: Oxford University Press.

Deer, Noel
1950 *The History of Sugar.* 2 vols. London: Chapman and Hall Ltd.

Demas, William G.
1965 Situation and Change. *Caribbean Economy: Dependence and Backwardness.* Mona, Jamaica: Institute of Social and Economic Research, University of the West Indies.

Despres, Leo
1967 *Cultural Pluralism and National Politics in British Guiana.* New York: Rand McNally and Co.

1969 Differential Adaptations in Micro Cultural Evolution in Guyana. *Southwestern Journal of Anthropology* 25.

Dickson, David
1974 *Alternative Technology and the Politics of Technical Change.* Great Britain: Fontana.

Dobb, Maurice
1975 *Studies in the Development of Capitalism.* New York: International Publishers.

Dorf, R. C.
1974 *Technology and Society.* California: Boyd and Fraser Publishing Company.

Doyle, J. J.
1966 *The Response of Rice to Fertilizers.* Rome: Food and Agriculture Organization of the United Nations.

Dumont, Rene
1963 *Report to the Government of British Guiana on Planning Agricultural Development.* Rome: Food and Agriculture Organization of the United Nations.

Dundas, Neilson L.
1975 Regionalism in Practice. A Paper Presented at a Seminar for Rice Workers held at Sophia, Georgetown.

Eckaus, Richard S.
1977 *Appropriate Technologies for Developing Countries.* Washington, D.C.: National Academy of Sciences.

Efferson, N.
1956 The Story of Rice. *The Rice Journal* LIX, Annual Issue.

Ellul, Jacques.
The Technological Society. New York: Vintage Books.

Erasmus, Charles J.
1967 Upper Limits of Peasantry and Agrarian Reform: Bolivia, Venezuela and Mexico Compared. *Ethnology* 6:349-380.

Evans-Pritchard, E. E.
1969 *The Nuer.* Oxford University Press.

Fanon, Frantz
1968 *The Wretched of the Earth.* New York: Grove Press, Inc.

Farley, Rawle
1953 The Rise of the Village Settlement in British Guiana. *Caribbean Quarterly* 3:101-109.

1954 The Rise of Peasantry in British Guiana. *Social and Economic Studies* 2:87-103.

1955a The Shadow of the Substance. *Caribbean Quarterly* 4:132-151.

1955b The Unification of British Guiana. *Social and Economic Studies* 4.

Farley, Rawle
1955c The Economic Circumstances of the Annexation of British Guiana 1795-1815. *Revista de Historia de America* 36-40: 21-59.

Feder, Ernest
1971 *The Rape of the Peasantry*. Garden City, New York: Anchor Books, Doubleday and Company, Inc.

Firth, R., Yamey, B. S. (eds.)
1964 *Capital, Saving and Credit in Peasant Societies*. Chicago: Aldine Publishing House.

Food and Agricultural Organization of the United Nations
1965 *The World Rice Economy in Figures*. Rome, Italy.

1972 *Meeting of Experts on the Mechanization of Rice Production and Processing*. Rome, Italy: United Nations.

FAO/IAEA
1970 *Rice Breeding with Induced Mutations II*. Vienna: Division of Atomic Energy in Food and Agriculture.

Foster, George M.
1973 *Traditional Societies and Technological Change*. Second edition. New York: Harper and Row Publishers.

Francis, William
1922 *The British Guiana Handbook 1922*. Georgetown, British Guiana: The Argosy Co., Ltd.

Frank, A. G.
1967 *Capitalism and Underdevelopment in Latin America*. New York: Monthly Review Press.

1969 Latin America: Underdevelopment or Revolution. New York: Monthly Review Press.

Freedman, J. D.
Iban Agriculture. London: Her Majesty's Stationery Office.

Friedl, E.
1963 Studies in Peasant Life. *Biennial Review of Anthropology*. B. J. Siegal, ed. Stanford, California: Stanford University Press.

Froehlich, Walter (ed.)
1961 *Land Tenure, Industrialization and Social Stability: Experience and Prospects in Asia*. Milwaukee, Wisconsin: The Marquette University Press.

Fromm, Erich
1968 *The Revolution of Hope: Toward a Humanized Technology.* New York: Bantan Books.

Frucht, R.
1971 A Caribbean Social Type: Neither "Peasant" nor "Proletarian." *Black Society in the New World.* R. Frucht, ed. New York: Random House.

Furnival, J. S.
1944 *Netherland India.* London: Cambridge University Press. ✓

1945 *An Introduction to the Political Economy of Burma.* 3rd ed. Rangoon: Burmese Press.

Furtado, Celso
1968 *The Economic Growth of Brazil.* Berkeley, California: University of California Press.

Gadd, H. E.
1951 Some Problems of Mechanized Rice Cultivation in British Guiana. *Timehri* 30:41-47. The Journal of the Royal Agricultural and Commercial Society of British Guiana.

Geertz, Clifford
1961 Studies in Peasant Life: Community and Society. *Biennial Review of Anthropology.* B. J. Siegal, ed. Stanford, California: Stanford University Press.

1970 *Agricultural Involution.* Berkeley, California: University of California Press.

Gendron, Bernard
1977 *Technology and the Human Condition.* New York: St. Martin's Press.

Gerth, H. H., Mills, W. (eds.)
1958 From Max Weber: *Essays in Sociology.* New York: Oxford University Press.

Gini, Corrado
1954 Occidental and Oriental Conceptions of Economic Progress. *International Social Science Journal* 6:227-231.

Ginzberg, Eli (ed.)
1964 *Technology and Social Change.* New York: Columbia University Press.

Girvan, Norman
1975 *Aspects of the Political Economy of Race in the Caribbean and the Americas: A Preliminary Interpretation.* Mona, Jamaica: University of the West Indies.

Girvan, N., Jefferson, O. (eds.)
1971 *Readings in the Political Economy of the Caribbean.* Mona, Jamaica: Institute of Social and Economic Research, University of the West Indies.

Gjessing, Gotorm
1968 Social Responsibility and the Social Scientists. *Current Anthropology* 9:397-402.

Glasgow, Roy Arthur
1970 *Guyana: Race and Politics Among Africans and East Indians.* The Hague: Martinus Nijhoff.

Goody, Jack
1972 *Domestic Groups: The Family and the Household.* Philippines: Addison-Wesley Publishing Company, Inc.

Gough, Kathleen
1968 The Politics of Community Development in British Guiana 1954-1957. *Social and Economic Studies* 14:170-182.

Gray, Lewis C.
1933 *History of Agriculture in the Southern United States to 1860.* Baltimore: Waverly Press, Inc.

Green, W. A.
1969 The Apprenticeship of British Guiana 1834-1838. *Caribbean Studies* 9:44-66.

Griffin, Keith
1969 *Underdevelopment in Spanish America.* Cambridge, Massachusetts: M.I.T. Press.

Grist, D. H.
1965 *Rice.* 4 ed. London: Longmans, Green and Co. Ltd.

Grümmer, Gerhard
1970 *Rice.* Leipzig edition. Printed in the German Democratic Republic.

Guerin, Daniel
1961 *The West Indies and their Future.* London: Dennis Dobson.

Guthrie, G. M.
1970 *The Psychology of Modernization in the Ruran Philippines.* Quezon City: Ateneo de Manila University Press.

Guyana Rice Development Co., Ltd.
1969 Report and Statement of Accounts. Georgetown: The Guyana Rice Development Company, Limited.

Guyana Rice Corporation
1970-71 *Second Annual Report and Statement of Accounts.* Georgetown, Guyana: Guyana Rice Corporation.

Guyana Manufacturers Association
1971-76 *Guyana Handbook.* Georgetown: Guyana Lithographic Company Limited.

Government of Guyana
1973 *Laws of Guyana* (revised edition). Local Government Act. Chapter 28:02. L.R.O. 1/1973.

1973 Local Authorities (Election) (revised edition). Chapter 28:03. L.R.O. 1/1973.

1973 The Constitution (revised edition). Chapter 1:01. L.R.O. 1/1973.

1973 Municipal and District Councils (revised edition). Chapter 28:01. L.R.O. 1/1973.

1973 Valuation for Rating Purposes (revised edition). Chapter 28:04. L.R.O. 1/1973.

Halperin, Ernst
1965 Racism and Communism in British Guiana. *Journal of Inter-American Studies* 7.

Halpern, J. M., Brode, J.
1967 Peasant Society: Economic Changes and Revolutionary Transformation. *Biennial Review of Anthropology.* B. J. Siegal and A. R. Beals, eds. Stanford, California: Stanford University Press.

Hanks, Lucien M.
1972 *Rice and Man.* Chicago: Aldine, Atherton, Inc.

Hanley, Eric
1975 Rice, Politics and Development in Guyana. *Beyond the Sociology of Development.* Ivar Oxall et al., eds. London: Routledge and Kegan Paul.

Harcourt, Robert
1926 *A Relation of a Voyage to British Guiana.* Alexander Harris, ed. London: Cambridge University Press.

Harland, Padfield, Martin, W. E.
1965 *Farmers, Workers and Machines.* Tucson: The University of Arizona Press.

Harper-Smith, Jones W.
1965 The Colonial Stock Acts and the British Guiana Constitution of 1891. *Social and Economic Studies* 14:252-263.

Harris, Marvin
1968 *The Rise of Anthropological Theory: A History of the Theories of Culture.* New York: Thomas Y. Crowell.

1975 *Culture, People, Nature.* Second edition. New York: Thomas Y. Crowell.

Harvard University Program on Technology and Society
1969 *Technology and Values.* Research Review No. 3.

1970 *Technology and the Individual.* Research Review No. 6.

Hayster, Teresa
1971 *Aid as Imperialism.* Penguin Books.

Hedley, Max J.
1976 *The Social Conditions of Production and the Dynamics of Tradition: Independent Commodity Production in Canadian Agriculture.*

Herkovits, Melville J.
1938 *Acculturation: The Study of Culture Contact.* New York: J. J. Augustin.

1954 Motivation and Culture-Pattern in Technological Change. *International Social Science Journal* 6:388-401.

Hewes, L. I., Jr.
1955 *Japan: Land and Men.* Ames, Iowa: The Iowa State College Press.

Heyward, Duncan C.
1937 *Seed from Madagascar.* Chapel Hill: The University of North Carolina Press.

Hickerson, H.
1954 *Social and Economic Organization in a Guiana Village.* Ann Arbor, Michigan: University Microfilms, Inc.

Hobsbawn, Eric J.
1969 *Industry and Empire: From 1750 to Present Day.* Middlesex: Penguin Books.

Hopkins, John A.
1973 *Changing Technology and Employment in Agriculture.* New York: DaCapro Press.

Houston, D. F. (ed.)
1972 *Rice: Chemistry and Technology*. St. Paul, Minnesota: The American Association of Cereal Chemists Inc.

Horowitz, I. L.
1972 *Three Worlds of Development: The Theory and Practice of International Stratification*. Second edition. New York: Oxford University Press.

Horowitz, Michael M.
Morne Paysan: Peasant Village in Martinique. New York: Holt, Rinehart and Winston.

Hubbard, E. A.
1972 *Fertilizer Recommendation for Some Crops in Major Agricultural Regions of Guyana*. Guyana: Ministry of National Development and Agriculture.

Hubbard, H. J.
1969 Race and Guyana. *The Daily Chronicle*. Georgetown.

Hulse, J. H., Spurgeon, D.
1974 Triticale. *Scientific American* 231:72-80.

Ince, Basil A.
1974 *Decolonization and Conflict in the United Nations: Guyana's Struggle for Independence*. Cambridge, Massachusetts: Schenkiman Publishing Company.

International Bank for Reconstruction and Development
1953 *The Economic Development of British Guiana*. John Hopkins Press.

International Commission of Jurists
1965 *Racial Problems in the Public Service*. Report of the British Guiana Commission of Inquiry, Geneva, Switzerland.

International Rice Research Institute
1964 *The Major Insect Pests of the Rice Plant*. Baltimore: John Hopkins Press.

1975 *Changes in Rice Farming in Selected Areas of Asia*. Los Banos, Philippines: International Rice Research Institute.

Irving, Brian (ed.)
1972 *Guyana: A Composite Monograph*. Puerto Rico: Inter-American University Press.

Jacoby, E. H.
1961 *Agrarian Unrest in South East Asia*. Bombay: Asia Publishing House.

Jagan, Cheddi
1954 *Forbidden Freedom.* New York: International Publishers.

1964 *The Anatomy of Poverty in British Guiana.* Georgetown: People's Progressive Party.

1966 *The West on Trial.* London: Michael Joseph.

1977 Guyana: A Reply to Critics. *Monthly Review* 29:4.

Jagan, Janet
1973 *Army Intervention in 1973 Elections in Guyana.* Ruimveldt, Georgetown: New Guyana Co. Ltd.

Jainarain, Iserdeo
1976 *Trade and Underdevelopment.* Guyana: Institute of Development Studies, University of Guyana.

Jalée, Pierre
1969 *The Third World in World Economy.* New York: Monthly Review Press.

Jayawardana, C.
1960 Marital Stability in Two Guianese Sugar Estate Communities. *Social andEconomic Studies* 9:76-100.

1963 *Conflict and Solidarity in a Guyanese Plantation.* University of London: The Athlone Press.

Jogerson, D. W.
1961 The Development of a Dual Economy. *Economic Journal.* E. A. G. Robinson and C. F. Carter, eds. Vol. 71. London: Macmillan and Co.

Jordon, Z. A. (ed.)
1971 *Karl Marx: Economy Class and Social Revolution.* London: Michael Joseph.

Joseph, Cedric L.
1970 The Venezuela-Guyana Border Arbitration of 1889: An Appraisal Part I. *Caribbean Studies* 10:56-89.

Judd, Laurence C.
1974 *Dry Rice Agriculture in Northern Thailand.* Data Paper Number 52, South East Asia Program, Department of Asian Studies, Cornell University, Ithaca, New York.

Kennard, Gavin
1970 Address to the Union of Local Authorities of Western Berbice. *Facts on Rice.* Georgetown, Guyana: The Daily Chronicle Ltd.

Khan, Noor
1975 A Short Paper on Marketing. A Paper Presented at a Seminar for Rice Workers held at Sophia, Georgetown.

Khusro, A. M. (ed.)
1968 *Readings in Agricultural Development.* Bombay: Allied Publishers, Private Limited.

King, K. F. S.
1968 *Land and People in Guyana.* London: University of Oxford.

Kirby, J. M.
1973 *Essequibo Islands: Analysis of Land Use Patterns.* Occasional Paper No. 3. Guyana: Department of Geography, University of Guyana.

Kishinda, Yoshisuke (ed.)
1971 *Agriculture Mechanization in South East Asia.* Tokyo, Japan: Farm Machinery Industrial Research Corporation.

Klass, Morton
1961 *East Indians in Trinidad.* New York: Columbia University Press.

Krisanmas, Phairach
1967 *Paddy Rice Movements and their Effect on the Economic Situation of Farmers in the Central Plain of Thailand.* Ann Arbor, Michigan: University Microfilms, Inc.

Kuhn, Thomas S.
1970 *The Structure of Scientific Revolution.* Second edition. Chicago: University of Chicago Press.

Kundu, A.
1963a The Economy of British Guiana. *Social and Economic Studies* 12:307-380.

1963b Inter-Industry Table for the Economy of British Guiana 1959 and National Accounts 1957-60. *Social and Economic Studies* 13:1-46.

1964 Rice in the British Caribbean Islands and British Guiana 1950-1975. *Social and Economic Studies* 13:243-281.

Kwayana, Eusi
1970 Economic Relations in Pre-Republican Guyana. *Co-op Republic, Guyana 1970.* L. Searwar, ed. Guyana: Lithographic Co. Ltd.

Landis, Joseph B.
1971 *Race Relations and Politics in Guyana.* Unpublished Ph.D. thesis, Yale University.

Lenski, Gerhard
1966 *Power and Privilege: A Theory of Social Stratification.* New York: McGraw-Hill Book Company.

Leach, Edmund R.
1964 Social Structure: The History of the Concept. *Encyclopedia of Social Sciences* 15:482-488.

Lewis, Arthur W.
1955 *The Theory of Economic Change.* Homewood, Illinois: Richard D. Irwin, Inc.

Lewis, Diane
1973 Anthropology and Colonialism. *Current Anthropology* 14: 581-602.

Lewis, Gordon
1968 *The Growth of Modern West Indies.* New York: Modern Reader Paperbacks.

Lewis, H. T.
1971 *Ilocano Rice Farmers.* Honolulu: University of Hawaii Press.

Lewis, Oscar
1963 *Life in a Mexican Village: Tepoztlan Restudied.* Urbana: University of Illinois Press.

London Times
1967 April 23.

Lowenthal, David
1972 *West Indian Societies.* Toronto: Oxford University Press.

Lowenthal, D., Comitas, L. (eds.)
1973 *The Aftermath of Sovereignty: West Indian Perspectives.* New York: Anchor Press/Doubleday.

Luckhoo, J. A.
1919 The East Indians in British Guiana. *Timehri* 6:53-65. Journal of the Royal Agricultural and Commercial Society of British Guiana.

Luning, H. A.
1969 *The Economic Transformation of Family Rice Farming in Surinam.* The Netherlands Centre for Agricultural Publishing and Documentation, Wageningen.

Lutchman, Harold
1970a The Co-operative Republic of Guyana. *Caribbean Studies* 10.

1970b Patronage of a Colonial Society. *Caribbean Quarterly* 16:34-50.

Lutchman, Harold

1970c Administrative Change in an Ex-colonial Setting - A Study of Education in Guyana 1961-64. *Social and Economic Studies* 19:26-56.

Madalgi, S. S.

Small Farmers in India and their Problems. *Studies in the Green Revolution*. G. S. Pohekar, ed. Bombay: United Asia Publications Pvt. Ltd.

Madramootoo, Harry

1969 *Hints for Profitable Rice Farming*. Georgetown, Guyana: Guyana Rice Corporation.

1970a *Declining Paddy Yields or the Farmers and his Machine*. Georgetown, Guyana: Guyana Rice Corporation.

1970b "The Guyana Rice Industry and its Organizational Structure." An Address delivered to members of the Geographical Society of the University of Guyana.

1970c Growing Starbonnet Under Continuous Flooded Conditions. Guyana Rice Corporation.

1971a "Credit for Rice Farmers." A Paper Presented at a Conference on Agricultural Credit, Sponsored by the Guyana National Co-Operative Bank, Georgetown, Guyana.

1971b Problems of Agricultural Production and Productivity. A Paper Presented at a Symposium on Agriculture, Sponsored by the Ministry of Agriculture, Georgetown, Guyana.

1971c Tillage Practices and Tillage Equipment for Rice Production on Small Family Farms. *Meeting of Experts on the Mechanization of Rice Production and Processing*. Italy, Rome: Food and Agricultural Organization of the United Nations.

1973 *The Story of Rice in Guyana*. Georgetown, Guyana: Guyana Rice Corporation.

1974 *A Rice Farmer's Word-Book*. Georgetown, Guyana: Guyana Rice Board.

Magubane, Bernard

1971 A Critical Look at Indices Used by Study of Social Change in Colonial Africa. *Current Anthropology* 12:419-445.

Malinowski, B.

1945 *The Dynamics of Culture Change*. Yale University Press.

Mamdani, M.
1972 *The Myth of Population Control.* New York: Monthly Review Press.

Mandall, Paul I.
1971 The Rise of the Modern Brazilian Rice Industry: Demand Expansion in a Dynamic Economy. *Stanford University Food Research Institute Studies* 10:161-219.

Mandle, Jay R.
1970 Population and Economic Change: The Emergence of the Rice Industry in Guyana, 1895-1915. *Journal of Economic History* 30:785-801.

1973 *The Plantation Economy: Population and Economic Change in Guyana 1838-196* . Philadelphia: Temple University Press.

1976 Continuity and Change in Guyanese Underdevelopment. *Monthly Review* 28:37-50.

Mao Tse-tung
1968 *Four Essays on Philosophy.* Peking: F.L.P.

Marcus, George
1969 Incomplete Transformation of Social Change in a Guyana Rural Community. *Caribbean Studies* 9.

Marx, Karl
1887 *Capital.* Vol. 1. F. Engels, ed. Moscow: Progress Publishers.

Massey-Ferguson Ltd.
1966 *Mechanization of the World's Rice: Report on and the World's Rice.* Oxford, London: Basil Blackwell.

Matsuo, Takane
1961 *Rice Culture in Japan.* Tokyo, Japan: Yokendo Ltd.

Matsushima, Seizo
1970 *Crop Science in Rice.* Tokyo: Fuji Publishing Co., Ltd.

Maynard, H. B. and Co. Inc.
1967 *An Analysis of Rice Handling Operations, Methods and Procedures.* A Report Prepared for the Guyana Rice Marketing Board.

McKenzie, H. I.
1966 The Plural Society Debate: Some Comment on Recent Contribution. *Social and Economic Studies* 15:53-60.

Mehta, Sushila
1971 *Social Conflicts in a Village Community*. New Delhi: S. Chand and Co. (Pvt.) Ltd.

Meillassoux, Claude
1972 From Reproduction to Production. *Economy and Society* 1: 93-105.

Mellor, J. W.
The Use and Productivity of Family Farm . . . . *Journal of Farm Economics* 45.

Miller, Frank C.
1977 Knowledge and Power: Anthropology, Policy Research and the Green Revolution. *American Ethnologist* 4.

Ministry of Economic Development
1975 *Quarterly Statistical Digest*. Ruimveldt, Georgetown: Guyana Printers Ltd.

Mitchell, William B. et al.
1969 *Area Handbook for Guyana*. Washington, D.C.: U.S. Government Printing Office.

Mintz, Sydney
Caribbean Transformation. Chicago, Illinois: Aldine Publishing Company.

Moore, Barrington, Jr.
1967 *Social Origins of Dictatorship and Democracy*. Baston: Beacon Press.

Morgan, W. B.
1962 *Journal of African History* 3.

Morris, George
1967 *CIA and American Labour*. New York: International Publishers.

Morris, Stephen
1965 Indian and East Africa: A Study in the Plural Society. *British Journal of Sociology* 7.

Motwani, Kewal
1951 The Impact of Modern Technology on the Social Structures of South East Asia. *International Social Science Bulletin* 3:783-793.

Murphy, Robert
1971 *The Dialectics of Social Life*. New York: Basic Books Inc.

Nash, Manning
1966 *Primitive and Peasant Economic Systems*. Scranton: Pennsylvania: Chandler Publishing Co.

Nath, Dwarka
1970 *History of the East Indian in British Guiana.* London: Thomas Nelson and Son.

Naipaul, Vidya S.
1968a *The Middle Passage.* Penguin Books.

1968b *An Area of Darkness.* Penguin Books.

Newman, Peter
1960 The Economic Future of British Guiana. *Social and Economic Studies* 9:263-296.

1961 Epilogue on British Guiana. *Social and Economic Studies* 10: 35-41.

1964 *British Guiana.* London: Oxford University Press.

Nuttonson, M. Y.
1965 *Global Agroclimatic Analogues for the Rice Region of the Continental United States.* Washington, D.C.: American Institute of Crop Ecology.

Okpaluba, C.
1972 *Judicial Review of Administrative Action in Guyana.* Georgetown, Guyana: Department of Political Science, University of Guyana.

O'Loughlin, C.
1958 The Rice Sector of the Economy of British Guiana. *Social and Economic Studies* 7:115-143.

1959 The Economy of British Guiana. *Social and Economic Studies* 8:1-104.

Onyemelukwe, C. C.
1974 *Economic Underdevelopment: An Inside View.* London: Longman Group Limited.

Oswalt, Wendell H.
1973 *Habitat and Technology.* New York: Holt Rinehart and Winston Inc.

Ou, S. A.
1973 *A Handbook of Rice Diseases in the Tropics.* Los Bonos, Philippines: International Rice Research Institute.

Oxall, Ivar et al. (ed.)
1975 *Beyond the Sociology of Development.* London: Routledge and Kegan Paul.

Paige, Jeffery M.
1975 *Agrarian Revolution*. New York: The Free Press. A Division of Macmillan Publishing Co., Inc.

Palmer, Ingrid
1973 *How Green is the Green Revolution*. London: Voluntary Committee on Overseas Aid and Development.

Pennington, Patience
1961 *A Woman Rice Planter*. Cambridge, Massachusetts: The Belknap Press of Harvard University Press.

Peterson, R. O.
1966 The Economics of Mechanised Rice Production. In *Mechanization and the World's Rice*. Massey-Ferguson Ltd. Oxford: Basil Blackwell.

Poonai, N. O.
1970 Wilderness and Wildlife in Guyana. *Co-op Republic Guyana 1970*. L. Serwar, ed. Guyana: Guyana Lithographic Co. Ltd.

Potter, Lesley M. (ed.)
1973 *Journal of Geographical Association of Guyana* 1.

Pratt, P. M.
1960 *Rice: Domestic Consumption in the United States*. Texas: Bureau of Business Research, University of Texas.

Purcal, J. T.
Rice Economy. An East-West Center Book. Honolulu: The University Press of Hawaii.

Ramphal, S. S.
1962 Fundamental Rights - The Need for New Jurisprudence. *Caribbean Quarterly* 8:139-144.

Ramiah, K.
1954 *Factors Affecting Rice Production*. Rome, Italy: Food and Agriculture Organization of the United Nations.

Ramgopaul, Lalta
1964 *Our Rice Industry*. Georgetown: Guyana Rice Producers' Association.

1968 *The Government and the Rice Industry: An Assessment of the Government Reorganization Programme 1964-1968*. Georgetown: Guyana Rice Producers' Association.

Ramlakhan, D.
n.d. *Rice in the Economy of British Guiana*. Unpublished manuscript.

Ramsahoye, Fenton W. H.
1966 *The Development of Land Law in British Guiana.* Dobbs Ferry, New York: Oceana Publications, Inc.

Ramsahoye, James W.
1970 *The Guyana Rice Marketing Board.* Unpublished M.B.A. thesis, University of Alberta, Edmonton.

Ramtahal, G., Akonaby, M.
1972 Possibilities and Problems of Machinery and the Role of Intermediate Technology. *Resource Development in the Caribbean.* Montreal: McGill University.

Rauf, M. A.
1972 *Crabwood Creek: A Study of Culture Change and Ethnic Identity.* Sacramento, California.

Redfield, Robert
1969 *The Little Community/Peasant Society and Culture.* Chicago: Phoenix Books, The University of Chicago Press.

Reid, P. A.
1970 Statement to Clarify Government's Policy for the Rice Industry. *Facts on Rice.* Georgetown, Guyana: The Daily Chronicle Ltd.

Reno, Philip
1964 *The Ordeal of British Guiana.* New York: Monthly Review Press.

Rhodes-Checchi Companies
1967/68 *Guyana Rice Facilities Improvement and Feasibility Study.* A Report to the Government of Guyana.

Rice Producers' Association
1957-68 *Rice Review.* Georgetown: Guyana Printers.

Richardson, Beryl
1969 *Sugar in Guyana.* Great Britain: Robert Cunningham and Sons Ltd.

Richardson, Bonham C.
1970 *Rice Culture of Coastal Guyana: A Study of Location and Livelihood.* Ann Arbor: University of Michigan.

1972 The Agricultural Dilemma in the Post Plantation Caribbean. *Inter-American Economic Affairs* 26:59-70.

Robinson, Pat
1970 *The Social Structure of Guyana.* Guyana: Guyana Lithographic Co. Ltd.

Rodway, James
1894 *History of British Guiana*. 3 vols. Georgetown: Thomson.

1919 Labour and Consolidation. *Thimiri* 6 (Consolidation Volume). Demerara: The Argosy Company Limited.

Rodney, Walter
1966 Mass in Action. *New World: Guyana Independence Issue*. Georgetown: New World Group Associates.

1970 *The Groundings with my Brother*. London: Press of Villagers Publication Ltd.

1972 *How Europe Underdeveloped Africa*. Dar-es-Salaam, Tanzania: Tanzania Publishing House.

Roberts, Walter
1959 Rice in British Guiana. *Timehri* 38. Journal of the Royal Agricultural and Commercial Society of British Guiana.

Rosenberg, Nathan
1977 *Perspective on Technology*. London: Cambridge University Press.

Ross, Aileen D.
The Hindu Family in its Urban Setting. Toronto: University of Toronto Press.

Rostow, W. W.
1960 *The Stages of Economic Growth*. London: Cambridge University Press.

Ruben, Vera (ed.)
1960 *Caribbean Studies, A Symposium*. Seattle: University of Washington Press.

1962 Culture, Politics and Race Relations. *Social and Economic Studies* 11:433-456.

Ruhumon, Peter
1947 Centenary History of the East Indians in British Guiana. *Daily Chronicle*, Georgetown.

Sahlins, Marshall D.
1974 Culture and Environment: The Study of Cultural Ecology. *Horizons in Anthropology*. Sol Tax, ed. Chicago: Aldine Publishing Company.

Salisbury, R. F.
1962 *From Stone to Steel*. Melbourne University Press.

Saywack, N.
1975 The Board's Finances. A Paper Presented at a Seminar for Rice Workers, Sophia, Georgetown.

Schlesinger, A., Jr.
1965 *A Thousand Days*. Boston: Houghton Mifflin Co.

Schomburgk, Robert H.
1970 *A Description of British Guiana*. Second printing. London: Frank Cass and Co. Ltd.

Schultz, T. W.
1953 *The Economic Organization of Agriculture*. New York: McGraw-Hill Book Company.

1964 *Transforming Traditional Agriculture*. New Haven: Yale University Press.

Schumacker, E. F.
1973 *Small is Beautiful*. London: Cox and Wyman Ltd.

Science and Engineers for Social and Political Action
1974 *China: Science Walks on Two Legs*. New York: Avon.

Searwar, L. (ed.)
1970 *Co-op Republic: Guyana 1970*. Guyana: Guyana Lithographic Co. Ltd.

Seaton, E. E.
1975 Notes on Purchasing, Storage and Milling of Paddy. A Paper Presented at a Seminar for Rice Workers, Sophia, Georgetown.

Shahabuddeen, M.
1973 *The Legal System of Guyana*. Georgetown: Guyana Printers Limited.

Shanin, Theodore (ed.)
1976 *Peasants and Peasant Societies*. New York: Penguin Books.

Shah, A. M.
1974 *The Household Dimension of the Family in India*. Berkeley, Los Angeles: University of California Press.

Silverman, Marilyn
Resource Change and Village Functionalism in an East Indian Community, Guyana. Unpublished Ph.D. thesis, McGill University, Montreal, Quebec.

Simms, Peter
1966 *Trouble in British Guiana*. London: George Allen and Unwin Ltd.

Singer, Philip

1967 Hinduization and Creoleization in Guyana. *Social and Economic Studies* 16:221-236.

Singer, Hans W.

1954 Problems of Industrialization of Underdeveloped Countries. *International Social Science Journal* 6:217-225.

Skinner, P.

1960 Group Dynamics in British Guiana. *Annals of the New York Academy of Sciences* 83:904-916.

1967 Ethnic Interaction in a British Guiana Rural Community: A Study of Secondary Acculturation 1955. Ann Arbor: University of Michigan.

Smith, M. G.

1962 *The West Indian Family Structure*. Seattle: University of Washington Press.

1965a *The Plural Society in the British West Indies*. Berkeley: University of California Press.

1965b *Stratification in Grenada*. Berkeley: University of California Press.

Smith, R. T.

1956 *The Negro Family in British Guiana*. London: Routledge and Kegan Paul Limited.

1957 Economic Aspects of Rice Production in an East Indian Community in British Guiana. *Social and Economic Studies* 6.

1959 Family and Marriage Amongst East Indians in British Guiana. *Social and Economic Studies* 8.

1962 *British Guiana*. London: Oxford University Press.

1970 Social Stratification in the Caribbean. Pp. 43-75 in *Essays on Comparative Social Stratification*. L. A. Platnicov and L. Tuden, eds. University of Pittsburg Press.

1971 Race and Political Conflict in Guyana. *Race: A Journal of Race and Group Relations* 12. London: The Institute of Race Relations.

Social Stratification, Cultural Pluralism and Integration in the West Indies.

Smith, R. T., Jayawardana, C.

1959 Hindu Marriage Customs in British Guiana. *Social and Economic Studies* 7.

1967 Caste and Status Among the Indians in Guyana. *Caste in Overseas Indian Communities*. M. Barton, ed. California: Schwartz Chandler Publishing Company.

Spanter, Joyce L.

1968 Attitudes Towards "Race" in Guyanese Literature. *Caribbean Studies* 8:23-63.

Speckman, J. D.

1965 *Marriage and Kinship Among the Indians in Surinam.* Netherlands: Royal Van Govcum.

Spicer, E. H. (ed.)

1952 *Human Problems in Technological Change*. New York: Russell Sage Foundation.

Srinivas, M. N.

1942 *Marriage and Family in Mysore*. Bombay: New Book Co.

Stavenhagen, Rodolfo

1975 *Social Classes in Agrarian Societies*. New York: Anchor Press/Doubleday.

Steinhart, J. S. & C. E.

1972 Energy Use in the U.S. Food System. *Science* 184:307-316.

Steward, Julian H.

1972 *Theory of Culture Change*. Chicago: University of Illinois Press.

Stinchombe, Arthur L.

1961 Agricultural Enterprise and Rural Class Relations. *American Journal of Sociology* 66:165-176.

Sutherland, Neville E.

1975 A Call for Higher Levels of Efficiency. A Paper Presented at a Seminar for Rice Workers, Sophia, Georgetown.

1976 The Rice Industry in Guyana: Scope and Programmes for Expansion. *Proceedings of the Tenth West Indian Agricultural Economic Conference*. S. C. Birla, ed. Trinidad: The University of the West Indies.

Thakur, Andra P.

1973 *Guyana: The Politics of Race and Class 1953-64.* Unpublished M.A. thesis, University of Alberta, Edmonton.

Thakur, Rishee
Imperialism and Nationalism in the Caribbean: The Political Economy of Dependent Development in Guyana. Unpublished M.A. thesis, University of British Columbia, Vancouver, B.C.

Thomas, Clive
1974 *Dependance and Transformation. The Economics of the Transition to Socialism.* New York: Monthly Review Press.

1976 Bread and Justice: The Struggle for Socialism in Guyana. *Monthly Review* 28:23-36.

Thorne, A. P.
1960 British Guiana's Development Programme: Analysis of Berrill Report and Newman Article. *Social and Economic Studies* 10.

Truitt, W. H., Solomons, T. W. G. (eds.)
1974 *Science, Technology and Freedom.* Boston: Houghton Mifflin Company.

UNESCO "Tensions" Project on Modern Technology
1949-50 International Tensions and Modern Technology. *International Social Science Journal* 1-2:169-172.

United Nations Social and Economic Council
1973 *Multinational Corporations in World Development.* United Nations Publications.

United States Department of Agriculture
1966 *Rice in the United States: Agriculture Handbook No. 289.* Agriculture Research Service.

Urwick, Orr and Partners
1966 *Survey of the Rice Marketing Board and Rice Development Company.* London.

Van de Goor, G. A. W.
1968 *Irrigation Requirements for Double Cropping of Lowland Rice in Malaya.* The Netherlands: H. Veenman and Zonen N.V.-Wageningen.

Van den Berghe, Pierre
1967 *Race and Racism: A Comparative Perspective.* New York: John Wiley and Sons Inc.

Vatuk, Sylvia
Kinship and Urbanization: White Collar Migration in Northern India. Berkeley, Los Angeles: University of California Press Ltd.

Vatuk, Ved P.
1963 *British Guiana*. New York: Monthly Review Press.

Venkatarayappa, K. N.
1973 *Rural Sociology and Social Change*. Bombay: Popular Prakashan.

Vining, James W.
1976 The Rice Economy of Government Settlement Schemes in Guyana. *Inter-American Economic Affairs*.

Wade, Nicholas
1974 Green Revolution (I): A Just Technology, Often Unjust in Use. *Science* 186:1093-1096.

1974 Green Revolution (II): Problems of Adapting a Western Technology. *Science* 186:1186-1188.

Wallace, Elizabeth
1964 British Guiana: Causes of Present Discontent. *International Journal* XIX.

Wallbridge, Edwin A.
1969 *The Demarara Martyr*. New York: Negro University Press.

Wallerstein, Immanuel (ed.)
1975 *World Inequality*. Montreal: Black Rose Books.

Watson, R.
1956 *Rice Production in the South Pacific Region*. Noumea, New Caledonia: South Pacific Commission.

Webber, A. R.
1931 *Centenary History and Handbook of British Guiana*. Georgetown: The Daily Chronicle.

Weber, Max
1947 *The Theory of Social and Economic Organization*. New York: Free Press.

Westmas, David
1971 The Local Government Elections - A National Scandal. *Thunder* 2:1.

Wharton, C. R. (Jr.)
1971 Risk, Uncertainty, and the Subsistance Tarmer: Technological Innovation and Resistance to Change in the Context of Survival. *Studies in Economic Anthropology*. George Dalton, ed. Washington: American Anthropological Association.

White, Leslie A.
1949 *The Science of Culture*. New York: Grave Press Inc.

White, Leslie A.
1959 *The Evolution of Culture*. New York: McGraw-Hill Book Company, Inc.

White, Lynn, Jr.
1962 *Medieval Technology and Social Change*. Oxford: The Clarendon Press.

Williams, Eric
1944 *Capitalism and Slavery*. Chapel Hill: University of North Carolina Press.

Wood, Peter H.
1974 *Black Majority*. New York: W. W. Norton and Company Inc.

Wolf, Eric R.
1955 Types of Latin American Peasantry. *American Anthropologist* 57:452-471.

1956 Aspect of Group Relations in a Complex Society. *American Anthropologist* 58:1056-1078.

1966 *Peasants*. Englewood Cliffs, New Jersey: Prentice-Hall, Inc.

1973 *Peasant Wars of the Twentieth Century*. New York: Harper Touchbooks, Harper and Row.

Wolf, Robert
1967 Beyond Tolerance. *A Critique of Pure Tolerance*. Boston: Beacon Press.

Newspapers

Daily Chronicle 1973-1976	Printed and published by Guyana Printers Limited, 18-20 Industrial Estate, Ruimveldt, Greater Georgetown, Guyana.
Forward 1974-1976	Printed and published by Guyana Printers Limited, 18-20 Industrial Estate, Ruimveldt, Greater Georgetown, Guyana.
Guyana Graphic 1973-1976	Printed and published by the Guyana Graphic Ltd., Lama Avenue, Bel Air Park, East Demerara, Guyana.
Mirror	Printed and published by the New Guyana Company Limited, Lot 8, Industrial Site, Ruimveldt, Greater Georgetown, Guyana.

APPENDIX I

PROBLEMS AND METHODS

It was a Sunday afternoon in August of 1964 after the usual cricket match. Most of the young men in the village were gathered at the village middle-walk bridge, the usual meeting place for holding the game's post mortem. A man, an obvious foreigner, approached the group and introduced himself. After a brief discussion, I gathered that he was a student in anthropology. (It was the first time I had heard the word and the first thing I did after I got home was to consult the family's treasured Little Pocket Oxford Dictionary for the meaning of anthropology.) The man was Mr. (now Professor) Mohamed Abdur Rauf. When we met, Rauf was new in the area and for the next three months he visited our village regularly and even addressed one of our regular Sunday (Hindu) religious services. He finally decided to collect data at Crabwood Creek, about five miles from our village. This was my first contact with an anthropologist.

Prior to my departure to the field in May of 1974--about ten years after I had first met Rauf--I was looked upon enviously by some of my friends in the Department, since I was not only going to do field work in Guyana (my native country) but I was also going to do field work in an area where I had spent the first twenty-one years of my life before coming to Canada in 1966. To add to that, I was going to study problems associated with the rice industry with which I had been directly involved from the time I quit primary school in 1950 until my departure for Canada in 1966.

When I arrived in the area to begin my field work I was still wrestling with a number of problems. I was not looking forward eagerly to meeting my first "native" as do so many students going into the field for the first time (see Chagnon 1976:1-17). I spent a lot of time thinking about the problems of "insider" versus "outsider," and wondering whether sins of omission or commission would interfere with the final analysis.

During the early years in Graduate School I became conscious and very critical of the role of British anthropologists in colonial administration, especially in Africa. Having lived in Guyana through a critical colonial period (1953-64), I was very much aware of the level of political corruption which developed in the country during the immediate pre- and post-independence period, and in no way was I going to become involved. Throughout the course of field work I was constantly on guard. On several occasions--especially by the end of my research--many government and Rice Board officials wanted me to assist in selling the Board's policy because they knew I had an excellent rapport with farmers. On the other hand, many farmers, especially middle status ones, wanted me to approach Board's officials for special benefits on their behalf.

Had I read Diane Lewis' article "Anthropology and Colonialism" (1973) before going to the field, I would have been in a better position to assess my own problems on the question of "scientific objectivity" and emic and etic categories (for further discussion see Harris 1969: 279-582, and 1975:159-163). Lewis pointed out that:

> The observer as outsider and the observer as insider will differ as they reflect different interests and they will be relevant in different contexts. This awareness underlies the current cry "you have to become one to understand one." Some view this insistence that only an insider can understand his own group as a reaction to scientific colonialism . . . However, this view is not based on desire to protect one's self or one's group from intellectual exploitation and feelings of inferiority. It is based on equality of conviction that an outsider's view of one's group can be biased, in its own way as that of an insider, and on the assumption that an insider's view can be valid and as acceptable as anthropology (1973:586-587).

The problem of insider or outsider doing research in human problems matters very little. Science and its application are neutral instruments; according to Barnett "*they can operate for the good or ill of mankind, depending on the value system and the man* [*or men*] *who puts them into play*" (1958:11).

My social, religious, and political activities prior to my departure in 1966 placed me in a unique position as a researcher in the Upper Corentyne area. Most of my friends were--and still are--farmers. As a result there were no problems of obtaining certain information, though these data always had to be checked and cross-checked to ensure accuracy. On most occasions, there was no need to ask for information; it was volunteered. The majority of farmers viewed Rice Board officials and wealthy farmers with suspicion. Being in association with these "big boys" (as wealthy farmers and government officials are often referred to) and Rice Board officials could have created some strained situations, but I had anticipated this problem and took the initiative to avoid it. At the end of the first week after I arrived in the area, I explained the purpose of my presence to some of the older men in the village* where I had planned to collect census data, and told them I would like to hold a meeting. They took the initiative and organized one. Although I did not need any introduction, two friends introduced me. Repetitious emphasis was made of my "academic achievement" and I was often referred to as "abee own boy"* (our own son). I explained in detail the purpose of my study. I was aware that there was a lot they would like to know about my academic and personal life, so I told them they could ask me any kinds of questions--no matter how personal--and I would try to answer them. Young budding politicians were curious to know if the CIA was financing my studies; the wealthier men wanted my assurance that my data would not be given to the government for income tax purposes. Many serious-minded young men wanted to know about academic opportunities in Canada; others were curious to know about social life, and wanted to satisfy their stereotyped notion of student life, parties and so on, which they have formed through the movies.

---

*For ethical and personal reasons, I decided not to collect data in the village where my parents live.

Most of the young men present at the meeting knew that I was a cricket enthusiast (cricket is the only sport played in the village) and asked me to play for the village club. I promised to play whenever possible. Everyone at the meeting agreed to assist in whatever way possible. The meeting had not only brought me back to the realities of life in rural Guyana, but renewed the basis for true friendship with everyone in the village and avoided any incidents that could have occurred. Most individuals were happy to learn that my political views

---

*Throughout our early years (in our family) were were taught never to refer to anyone older than ourselves by their name. We refer to most of the older women as *Nanee* (maternal grandmother) and the older men as *Nana* (maternal grandfather). We refer to the men as *Mamoo* (mother's brother) and their wives as *Mamee* (mother's brother's wife). Those whom and social values throughout my absence had not changed. I also promised to let them read my thesis before final completion.

Two weeks later I found myself in another favourable situation. I was drinking* with an old friend, a rice miller, casually explaining to him the purpose of my visit to Guyana. Half an hour later, he insisted that I accompany him to a Lion's Club meeting. He had been elected president and this was his inaugural night. Half-way through the meeting there was reference to "our returned scholar" and "guest of honour." At the end of the meeting, I was asked to speak. It was difficult because I knew little about the Club (all I knew of the Club was what I had heard when I was quite young, namely, that it did not recruit its membership from the lower class). However, I took the opportunity to explain the purpose of my research. After the meeting several members came up and complemented me on my academic achievement and offered their assistance. The membership of the Club was made up of the local businessmen, school headmasters, bank managers, senior Rice Board employees, professionals, and wealthy rice farmers, several of whom offered to sponsor me to join the Club. Thus, from the very beginning of my research, I was accepted by all those who were able to provide information (at the village level) during the course of my field work.

The privilege of being "abee own boy" in other settings had its adverse reactions. I was hardly given the same reception, seemingly

---

we cannot "peg" we refer to as "uncle" and "aunti." This is partly because my maternal grandmother was born in the area and all the elderly men referred to her as *Deed* or *Bahin* (sister). Thus, under the norm, my mother sees them as her mother's brothers.

*The social function of (rum) drinking in Guyana could hardly be overstated. It sometimes provides the avenue into new social groups. Drinking has often placed me in ideal situations where information has been volunteered.

reversed for foreign researchers (for further discussion see Lewis 1973: 587). This was due partly to my own attitude and social values. Guyanese, especially those within the civil service and middle class, carry a stereotyped notion as to how individuals--from each different social group--should display their social mannerisms, that is, acting in accordance with one's social position--dress, language (accent) and so on. On several occasions, I was refused permission to see officials because I had no credentials in my possession, and didn't look* like a university student.

---

*It was never my intention to disguise or conceal my identity, but more often than not, I was mistaken for a farmer rather than a student seeking information (the problem was partly mine, since I am aware of the stereotyped notion carried by Guyanese). Most of the time I dressed loosely--no shoes, pants rolled up, and after the first few weeks "picked up" the creolese accent and slang. The response was never the same when I was well-dressed, spoke properly, and carried my credentials (usually a letter from the University of Alberta). In the latter case, officials often went out of their way to assist. This dual identity has provided some valuable experiences which could not have been otherwise. One particular incident I would like to narrate.

One day I went with some friends to a Board's warehouse to sell paddy. I suggested to my friends that I would be there just as any other worker, carrying paddy bags. Before we left home, I also requested that no one (there were four other farmers) should "pass any bribe," (I was conscious of the fact that I was there to do research--not to make decisions for farmers--but as an individual I had my conscience to live with) though I had indicated my interest to see what actually goes on. We arrived at the warehouse about 9:45 a.m. and were not attended to until about 2:30 p.m. after several trucks, which came after us, were attended to. During that period, not only was it explained to me how the "buck was passed" but I had the opportunity to observe closely the movements of the middle-man. What I observed was not only shameful but also disgraceful to see the level that men would belittle themselves and cheat others. Though I was conscious of my role, I was emotionally hurt, partly because the middle-man's elder brother had been an old family friend. I went through another state of emotional strain when a friend, who was a schoolteacher, was assisting his father in the rice fields and was pinned to death when the tractor he was driving overturned on him. I later raised the question of bribery with a senior official of the Board who said (and showed me some techniques they used to avoid bribery) that the East Indians, because of their cultural tradition which they had

Many individuals who later apologized pointed out that individuals who wished to see officials were in the habit of giving false information. In the area, my role was also stereotyped and deviations from these expectations could have been harmful to my research. For example, when paddy is being dried on the drying floor and there are signs of imminent rain, it is expected that everyone around will assist to "heap-and cover" the paddy. The whole scene looks wild and chaotic. I really wanted to film such a scene but could not stand with a movie camera taking pictures while peoples' yearly earnings were being destroyed. I avoided this because I would have been looked on with disapproval.

Library research was carried out at the University of Guyana, the Government Archives and the Central Agriculture Station at Mon Repos. Two important journals, *Thimini* and *Rice Review*, which are not available outside Guyana, were very useful. However, there were disappointments since the complete collection was not available. Newspapers, both past and present, have proven to be of enormous assistance. They were supplemented by scores of interviews with both poor and wealthy farmers, Rice Board officials, and the Minister of Agriculture. The United States Information Service (USIS) Office library in Main Street, Georgetown, has provided me with some of the technical research materials (see Appendix II) which are not readily available elsewhere.

---

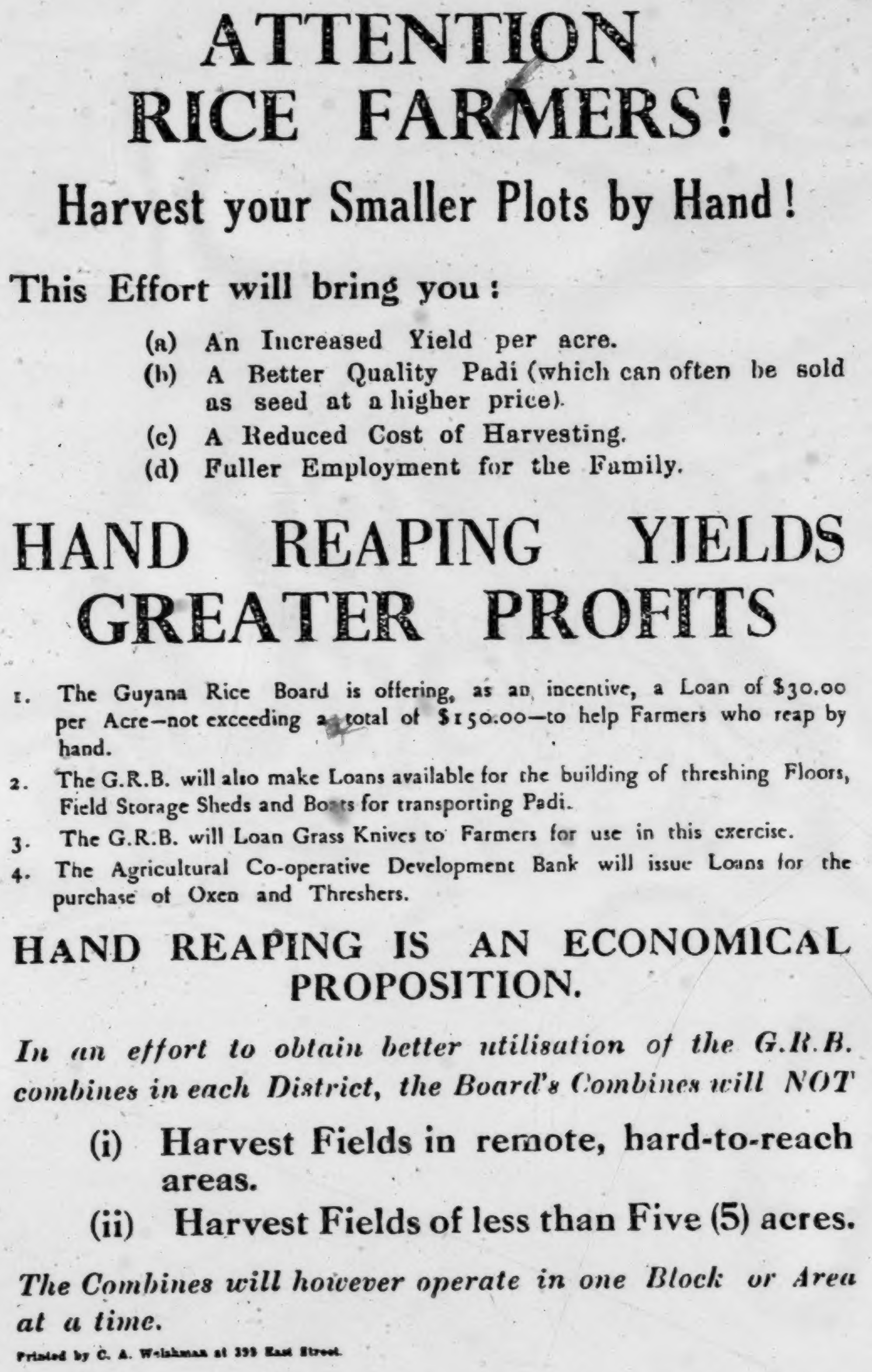
brought from India, were greatly responsible for the level of bribery in the country. He pointed out that the East Indians were in the habit of always giving something in return--even after they received what was rightfully theirs. But I pointed out to him that Afro-Guyanese were also at both the giving and receiving ends. He agreed that corruption was quite prevalent in Guyanese society. In the course of an interview, the question of bribery was also raised with the Minister of Agriculture. From observation and information, I was determined to write a subsection on the culture of corruption in the rice industry. Subsequent reflection prevented me from doing this for the present.

APPENDIX II

FOREIGN EXPERTS

Year	
1965	Connel Rice and Sugar Company U.S.A. was retained to sell surplus rice on the world market and to train local personnel in marketing, shipping, etc.
1965	Caffey and Efferson, two U.S. rice specialists, carried out an appraisal of rice production and marketing problems.
1965	Connel and Hall, two specialists from the British Ministry of Overseas Development, investigated the storage and infestation problems of the rice industry.
1966	Urwick Orr and Partners, U.K. Managements Consultants, conducted a survey of the Rice Marketing Board and the Rice Development Company.
1966	Frederick Johnson, a U.S. consultant, considered the priority to re-establishing the rice industry on a sound basis.
1966	Forte Committee (Local) carried out a survey on all aspects of the rice industry.
1967	The MacMillan Advertising Company of Jamaica carried out a marketing survey in Jamaica for the Rice Board.
1967	Caffey and Efferson appraised the fesibility of establishing an adequate tropical coastal agricultural research facility in Guyana.

Year	
1967	Maynard and Company, Management Consultant of the U.S. carried out an analysis of the rice handling operations, methods and procedures at the Rice Marketing Board.
1967/68	Rhodes/Chekki, U.S. specialists, reported on the storage to market segment of the industry.
1973	A. A. Ackels, of the U.S., prepared a report on Technical and Managerial Assistance Recommendations, Rice Modernization Project--Guyana, for the Agency for International Development.



ATTENTION RICE FARMERS!

Harvest your Smaller Plots by Hand!

This Effort will bring you:

(a) An Increased Yield per acre.
(b) A Better Quality Padi (which can often be sold as seed at a higher price).
(c) A Reduced Cost of Harvesting.
(d) Fuller Employment for the Family.

HAND REAPING YIELDS GREATER PROFITS

1. The Guyana Rice Board is offering, as an incentive, a Loan of $30.00 per Acre—not exceeding a total of $150.00—to help Farmers who reap by hand.
2. The G.R.B. will also make Loans available for the building of threshing Floors, Field Storage Sheds and Boats for transporting Padi.
3. The G.R.B. will Loan Grass Knives to Farmers for use in this exercise.
4. The Agricultural Co-operative Development Bank will issue Loans for the purchase of Oxen and Threshers.

HAND REAPING IS AN ECONOMICAL PROPOSITION.

In an effort to obtain better utilisation of the G.R.B. combines in each District, the Board's Combines will NOT

(i) Harvest Fields in remote, hard-to-reach areas.
(ii) Harvest Fields of less than Five (5) acres.

The Combines will however operate in one Block or Area at a time.

Printed by C. A. Welshman at 393 East Street.

APPENDIX IV

THE GUYANA RICE PRODUCERS' ASSOCIATION

To All Rice Farmers and District Committees of the Guyana Rice Producers' Association

Hereunder are demands being put forward to Government on you behalf by the Guyana Rice Producers' Association.

The Association would like you to discuss this matter fully at all levels and to have you comments early.

(1) The Rice Board should demand over $80.00 per bag for rice from the West Indies because the West Indian territories are purchasing rice of similar quality from U.S. and elsewhere for $110.00 per bag. The Rice Board should in turn increase the purchase prices for rice to $70.00 per bag and paddy to $35.00 per bag commencing from 1st September, this year. Furthermore, the increased prices must be announced now before ploughing operations begin for the comming Autumn crop. These prices will go a far way to assist the farmers to meet the high cost of production and other commitments; also rehabilitate them for the losses they have suffered to their crops and the uneconomical prices they have been receiving for their rice and paddy from 1966 to 1974.

(2) Rice producers through their organization - the Guyana Rice Producers' Association must have a big say and meaningful participation in the management of the Rice Board.

(3) The new grading system should be changed, because farmers' rice and paddy are being graded closely to international standard. As a result they are receiving low grades whereas, they are not receiving international prices for their rice and paddy. The 3-man panel grading system should be reintroduced comprising of three trained graders, one by the Guyana Rice Producers' Association representing the sellers (who are rice farmers), one by the Rice Board as buyers and the other a neutral member nominated by the Ministry of Agriculture.

(4) Appeal Committee should be comprised of majority farmers. Two representatives each from the Association should be appointed to the Silo purchasing Centres to watch the interest of the farmers when samples are being taken at the Scale, Dockage and moisture testers; also at the Board's Warehouses at Georgetown, Stanleytown and Springlands.

(5) Agriculatural machinery and spare-parts should also be sold at duty free prices. Restoration of duty free gasolene and grant duty free concession for dieselene and spare-parts for both Single Stage and Multi-Stage rice mills to rice farmers and rice millers.

(6) The Rice Board should reduce the prices for empty bags from 70 cents each to 45 cents each.

(7) Restoration of the Annual Grant used to be paid by the Board to the Association to defray expenses for its employees.

CONCLUSION:

From 1966 to 1974 rice farmers have suffered thousands of dollars' losses in the industrv. Therefore these demands should be met now, in order to restore confidence again in the rice producers so that together we can take out the industry from the dilemma which it is now facing.

ISSUED BY THE GUYANA RICE PRODUCERS' ASSOCIATION

March 14, 1974.